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Minority Biomedical Research Support Program

U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

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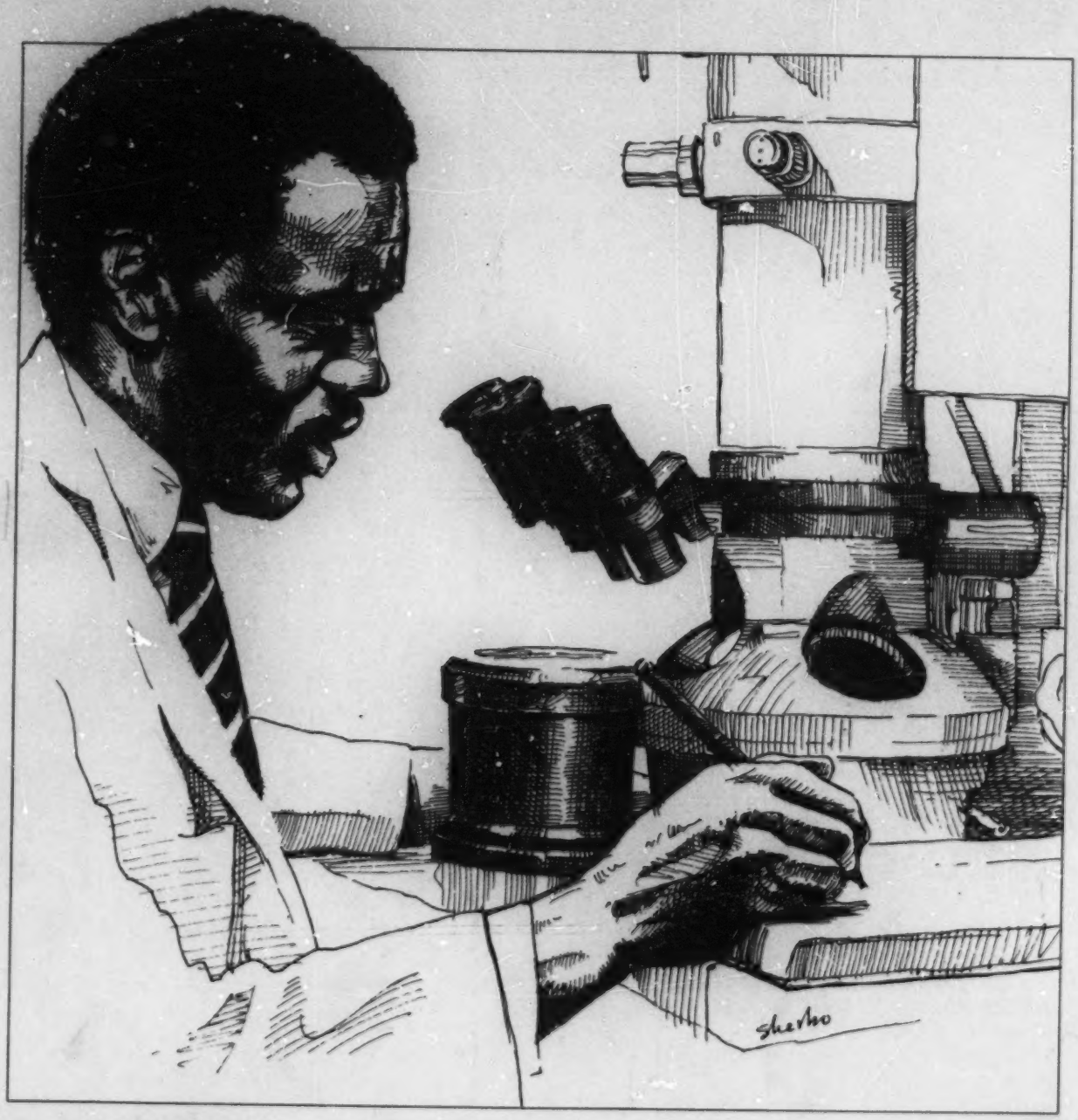
A Research
Resources Directory

Fourth Revised Edition
1982



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Rockville, Maryland 20852
(301) 881-4150

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Division of Research Resources
National Institutes of Health
Bethesda, Maryland 20205
(301) 496-5545

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Bethesda, Maryland 20205

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Minority Biomedical Research Support Program

A Research Resources Directory

Revised
June 1982

U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

NIH Publication No. 82-1432

Minority Biomedical Research Support Program

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Minority Biomedical Research Support Program

To correct the underrepresentation of minorities in biomedical research and to eliminate obstacles to their participation, the Minority Biomedical Research Support (MBRS) Program of the NIH Division of Research Resources (DRR) was begun in 1972. The major thrust of the program is to develop minority student, faculty, and institutional involvement in biomedical research. Through its grants, the MBRS program supports projects designed to strengthen the biomedical research capabilities of minority institutions and to expand the involvement of minority faculty and students in biomedical research. Funds for these research projects provide scientific equipment, facility renovations, improvement of animal care facilities, support of students, travel to professional meetings, and release of faculty from teaching to conduct biomedical research.

The MBRS program has steadily increased the number and types of institutions and the scope of projects supported. At its inception in 1972, the program supported 170 research projects at 38 institutions; in 1981, it supported 507 projects at 81 institutions. Unlike the original 38 institutions, the 81 institutions now supported include 2-year colleges. Most have large minority student enrollments.

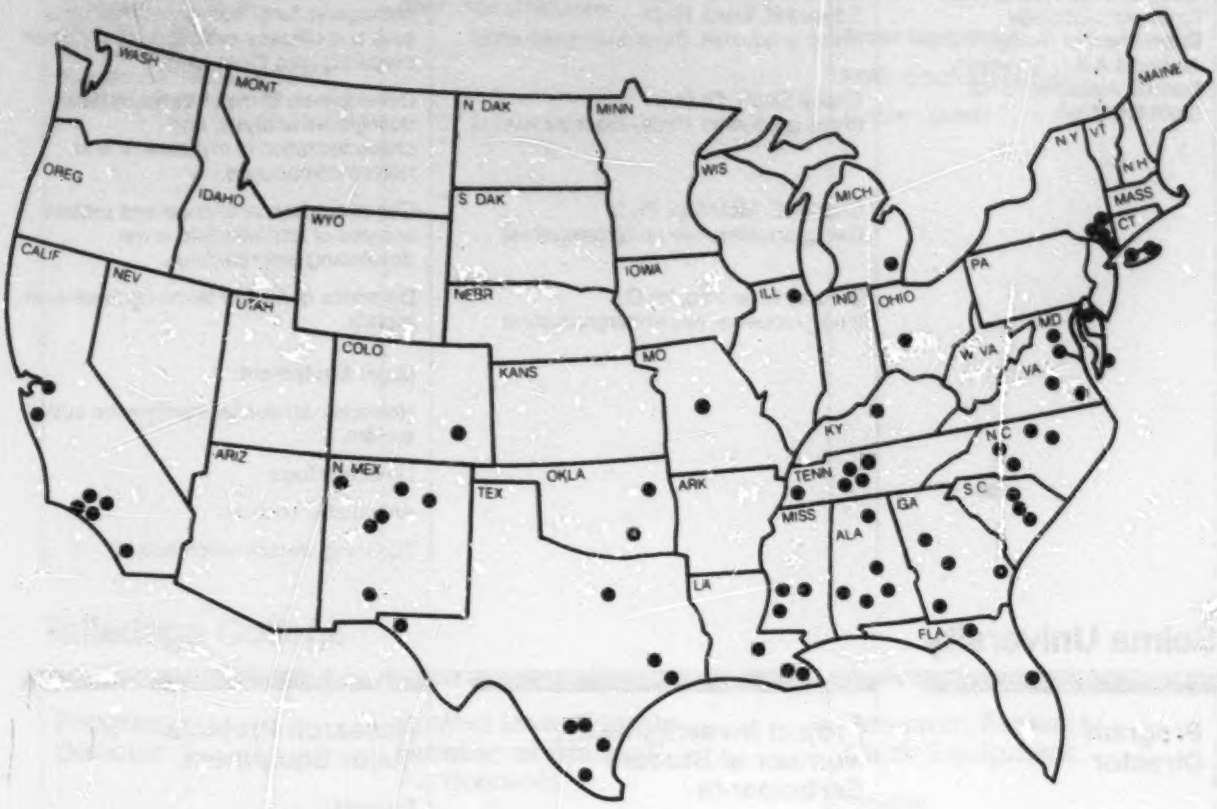
The scope of program support has branched out from general institutional support for facilities and personnel to encompass funding for individual research projects involving faculty and students. A unique feature of the program is its emphasis on undergraduate participation in all aspects of biomedical research, including conceptualization of important research questions, design of experiments, review of the literature, collection and analysis of data, and finally, interpretation and reporting of results at meetings and in scientific journals.

Purpose and Organization of the Directory

This publication constitutes a complete revision of the 1980 edition of the Minority Biomedical Research Support Program Directory prepared by the Research Resources Information Center for the Division of Research Resources, National Institutes of Health. It is one of a series of directories of research resource facilities and services supported by the DRR throughout the United States. This new directory is a guide to MBRS-supported research projects and facilities throughout the country.

Directory entries are organized alphabetically by state and by name of grantee institution within each state. Each entry includes the name of the institution; the name, address, and telephone number of the program director; project investigators and number of student participants; and research projects and equipment. A geographical index to the grantee institutions is provided at the end of the directory. It lists the institutions alphabetically by state and by title within each state and includes the names of the cities in which they are located and the page on which each entry appears.

Geographic Location of MBRS Grantees FY 1981



Hawaii	2
Puerto Rico	4

Summaries of the Programs

Alabama A & M University

Program Director

George W. Grayson, Ph.D.
Professor of Biology
Department of Biology
Alabama A & M University
Normal, Alabama 35762
(205) 859-7268

Project Investigators Number of Student Participants

Jeanette Jones, Ph.D.
Edward R. Ward, Ph.D.
(three graduates; three undergraduates)

Bharat Singh, Ph.D.
(three graduates; three undergraduates)

Charles E. McMillan, Ph.D.
(two graduates; two undergraduates)

D. Ramkishan Rao, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Isolation and identification of human pathogenic fungi from select Alabama soils and efficacy evaluation of vaccines prepared from these fungi.

Development of methods for isolation, quantitative analysis, and characterization of myristicene and related compounds.

Osmotic pressure change and protein analysis of amniotic fluid in the developing embryo/fetus.

Dynamics of dietary fat on cholesterol in rabbits.

Major Equipment:

Nomarski differential interference optics system.

Ultracentrifuge.

Amino acid analyzer.

Scanning electron microscope.

Selma University

Program Director

Bettaiya Rajanna, Ph.D.
Professor and Chairman
Division of Natural and Applied Sciences
Selma University
1501 Lapsley Street
Selma, Alabama 36701
(205) 872-8061

Project Investigators Number of Student Participants

Kirit Chapatwala, Ph.D.
Shobha Sriharan, Ph.D.
James V. Caldwell
(four undergraduates)

Bettaiya Rajanna, Ph.D.
Kirit D. Chapatwala, Ph.D.
Shobha Sriharan, Ph.D.
Marvin V. Hobson, M.S.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Chemistry and immunochemistry of *Mycobacterium phlei* phage receptor sites.

Interaction of heavy metals with the uptake of catecholamines (DA and NE) by the brain and heart.

Major Equipment:

Liquid scintillation counter.

Gilford 250 UV spectrophotometer.

Tissue culture laboratory.

Stillman College

Program Director

Jarnail Singh, Ph.D.
Professor of Biology
Stillman College
P.O. Box 1430
Tuscaloosa, Alabama 35401
(205) 349-4240 x24/37

Project Investigators Number of Student Participants

Jarnail Singh, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Prenatal effects of air-pollutant gases.

Major Equipment:

NMR spectrophotometer.

Coulter counter.

Talladega College

Program Director

Arthur L. Bacon, Ph.D.
Chairman
Division of Natural Sciences and Mathematics
Talladega College
Talladega, Alabama 35160
(205) 362-7652

Project Investigators Number of Student Participants

Arthur L. Bacon, Ph.D.
(four undergraduates)

V. V. Murthy, Ph.D.
(four undergraduates)

Charlie M. Stinson, Ph.D.
Albert Fernandez, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Effects of select food additives (saccharin and cyclamate) on development in the sea urchin.

Tyrosinase in the development of the fertilization membrane in sea urchin embryos.

Synthesis of water-soluble porphyrins and their interaction with metal ions.

Major Equipment:

All instrumentation necessary for preparation of material for scanning electron microscope.

Access to scanning electron microscope at University of Alabama in Birmingham by interinstitutional agreement.

Tissue culture laboratory.

Tuskegee Institute

Program Director

James H. M. Henderson, Ph.D.
Chairman
Division of Natural Sciences
Tuskegee Institute
Tuskegee, Alabama 36088
(205) 727-8124

Project Investigators Number of Student Participants

G. A. Chibuzo, Ph.D.
(two graduates; one undergraduate)

R. R. Dalvi, Ph.D.
(two undergraduates)

Earl Dixon, Ph.D.
(one graduate; one undergraduate)

H. O. Goyal, Ph.D.
(one graduate; two undergraduates)

T. Habtemariam, Ph.D.
(one graduate; two undergraduates)

G. E. Heath, Ph.D.
(one graduate; one undergraduate)

E. M. Jenkins, D.V.M., Ph.D.
(two graduates; two undergraduates)

W. E. Johnson, Ph.D.
(one graduate; two undergraduates)

A. G. Ludwick, Ph.D.
(one graduate; one undergraduate)

J. E. Thomas, Ph.D.
(two graduates)

M. E. M. Tolbert, Ph.D.
(one graduate)

O. P. Verma, Ph.D.
(one graduate; one undergraduate)

L. P. Washington, Ph.D.
(one graduate; two undergraduates)

Research Projects/ Major Equipment

Projects:

Lingual proprioceptive and autonomic centers.

Hepatic metabolism and toxicity of thiram.

Calcium metabolism in erythrocytes.

Role of ductuli efferentes in sperm maturation.

Epidemiologic investigation of toxoplasmosis.

Drug studies in pigs infected with swine dysentery.

Evaluation of secretory immunity in swine dysentery.

Potential vectors of encephalitides in Macon County.

Synthetic polynucleotide models as therapeutic agents.

Role of tRNA in controlled synthesis of amino acids.

Morphological and metabolic studies of hepatic cells.

Role of prostaglandin E in the control of reproduction.

Control of membrane topography by the cytoskeleton.

Major Equipment:

Philips 201 transmission electron microscope and accessories.

Scanning electron microscope (ISI-DS-130), accessories, and support facilities.

Gas-liquid chromatograph.

Scintillation counter (Packard Tri-Carb).

Multisystem (Leitz) Orthoplan photomicroscope.

California State University, Dominguez Hills

Program Director

Lois W. Chi, Ph.D.
Professor of Biological Science
California State University, Dominguez Hills
Carson, California 90747
(213) 516-3401

Project Investigators Number of Student Participants

Lois W. Chi, Ph.D.
(two graduates; two undergraduates)

Evelyn T. Childress, Ph.D.
(two undergraduates)

Laura M. Phillips, Ph.D.
(one graduate; two undergraduates)

Laura J. Robles, Ph.D.
(one graduate; one undergraduate)

George Wiger, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Resistance of mice exposed to cercariae of *Schistosoma japonicum* which has been treated with N-methyl-N'-nitro-N-nitrosoguanidine.

Immune responses in murine schistosomiasis japonica.

Ethambutol action on cell-free systems of *Mycobacterium.*

Membrane synthesis and degradation in photoreceptors.

Synthetic routes to the tropane alkaloids.

Major Equipment:

Sonicator and attachments.

Ultracentrifuge.

Cryostat.

California State University, Los Angeles

Program Director

Lloyd N. Ferguson, Ph.D.
Professor of Chemistry
California State University
5151 State University Drive
Los Angeles, California 90032
(213) 224-3174

Project Investigators Number of Student Participants

Lloyd N. Ferguson, Ph.D.
(one graduate; three undergraduates)

Anthony J. Andreoli, Ph.D.
(two graduates; four undergraduates)

Joseph Bragin, Ph.D.
(three undergraduates)

Costello L. Brown, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Biomolecular studies on the sense of taste.

Biochemical studies of sporulation in *Bacillus* species; nicotinamide adenine dinucleotide metabolism in bacteria.

Resonance Raman spectroscopy of neuroleptic drugs.

Negative ionization of bioorganic molecules.

(Continued on next page)

California State University, Los Angeles—Continued

	Douglas L. Currell, Ph.D. Harold Goldwhite, Ph.D. (one graduate; three undergraduates)	Synthetic organophosphorus and organosulfur compounds as allosteric effectors for hemoglobin.
	Phoebe K. Dea, Ph.D. (one graduate; one undergraduate)	Binding of cyclic AMP to metal ions and protein kinases.
	Anthony Fratiello, Ph.D. (three undergraduates)	Mechanism of anticancer agent complex formation.
	Carlos G. Gutierrez, Ph.D. (one graduate; one undergraduate)	A versatile synthesis of therapeutic chelating agents.
	Thomas P. Onak, Ph.D. (one graduate; two undergraduates)	Biologically active small cage boron compounds.
	Donald R. Paulson, Ph.D. (three undergraduates)	Model systems for oxygen-utilizing heme proteins.
	Stanley H. Pine, Ph.D. (one graduate)	CIDNP as a probe for free radical pathways in biological reactions.
	Howard Rosen, Ph.D. (one graduate; two undergraduates)	Nature of repair of DNA damage in *Chlamydomonas*.
	Joseph A. Sacher, Ph.D. (three undergraduates)	Regulation of senescence of bean cotyledons.
	Joseph T. Seto, Ph.D. (two graduates; two undergraduates)	Glycoproteins of paramyxoviruses and orthomyxoviruses.
	Margaret C. Jefferson, Ph.D. (one graduate; three undergraduates)	Genetic analysis of olfactory discriminating and learning behavior.
	Jane S. Lewis, D.P.H. (three undergraduates)	Riboflavin status of Caucasian, Oriental, and black women.
	Rosemarie Marshall, Ph.D. (one graduate; two undergraduates)	Antimicrobial susceptibility testing of anaerobic bacteria.
	Betsy Peitz, Ph.D. (one graduate; one undergraduate)	Biochemical and biological analysis of seminal proteins.
		Major Equipment:
		Full-time glassblower, metal, and wood shops with several full-time mechanics and electronic equipment technicians.
		Modern instrumentation for chemical, biological, biochemical, and microbiological research.
		PROPHET: an interactive, graphics-based computer system for biomedical research.

Charles R. Drew Postgraduate Medical School

Program Director

Lawrence J. Alfred, Ph.D.
Professor of Pathology
Pathology Department
Charles R. Drew
Postgraduate Medical
School
Los Angeles, California
90059
(213) 603-3061/3158

Project Investigators Number of Student Participants

Lawrence J. Alfred, Ph.D.
(two undergraduates)

Xylina Bean, M.D.
(two undergraduates)

Ronald Bloom, M.D.
(one undergraduate)

Daisy Carr, Ph.D.
(two undergraduates)

Major L. Cohn, Ph.D.
(two undergraduates)

Hector Myers, Ph.D.
(three undergraduates)

Lawrence Robinson, M.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Lymphotoxin and arylhydrocarbon hydroxylase synthesis by human lymphocytes; lymphokine release by carcinogen-treated mouse lymphocytes.

Plasma renin activity response to sodium and volume changes in newborns.

Pulmonary surfactant in the developing rabbit lung.

Effect of hallucinogens on sister chromatid exchange and cell kinetics in the hamster.

A new hypothesis of morphine action in the rat.

Stress mediation in families of black hypertensives.

Characterization of immune complexes in clinical disorders.

Major Equipment:

Liquid scintillation counters.

Preparative ultracentrifuges.

Gamma counter.

Mass spectrometer.

UV-visible spectrophotometers.

Hitachi transmission electron microscope.

Liquid nitrogen cell-freezing system.

Immunofluorescence microscope.

East Los Angeles College

Program Director

Carcy L. Chan, M.S.
Associate Professor
Department of Chemistry
East Los Angeles College
1301 East Brooklyn Avenue
Monterey Park, California
91754
(213) 265-8850/8848

Project Investigators Number of Student Participants

Carcy L. Chan, M.S.
(six undergraduates)

Research Projects/ Major Equipment

Projects:

Synthesis of new analogs of methotrexate.

Major Equipment:

Infrared, UV-visible, and nuclear magnetic resonance spectrometers.

Gas chromatographs.

Flame photometer.

Fluorometer.

San Jose State University

Program Director

Robert A. Hicks, Ph.D.
Professor
Psychology Department
San Jose State University
125 South 7th Street
San Jose, California 95192
(408) 277-3965

Project Investigators Number of Student Participants

Albert J. Castro, Ph.D.
(one graduate; two undergraduates)

James D. Hawkins, Ph.D.
(one graduate; one undergraduate)

Robert A. Hicks, Ph.D.
(two graduates; two undergraduates)

Robert A. Fox, Ph.D.
(one graduate; one undergraduate)

Research Projects/ Major Equipment

Projects:

3-alkylation: pyrrole ring and arylsulfonylammonium halides.

Sleep, genetics, and affective states.

REM-sleep deprivation and aggression in rodents.

Vestibular and hormonal effects in motion sickness in mice, rabbits, and primates.

Major Equipment:

Low-light television recording and monitoring system.

Polygraphs.

University of California, San Diego

Program Director

Willie C. Brown, Ph.D.
Associate Professor
Department of Biology, C-016
University of California, San Diego
La Jolla, California 92093
(714) 452-3463

Project Investigators Number of Student Participants

Willie C. Brown, Ph.D.
(two undergraduates)

Michael Cole, Ph.D.
(two undergraduates)

George Fortes, Ph.D.
(two undergraduates)

Trevor McMorris, Ph.D.
(two undergraduates)

Ramon Pinon, Ph.D.
(two undergraduates)

Percy Russell, Ph.D.
(one graduate; two undergraduates)

Research Projects/ Major Equipment

Projects:

Mechanism of spore germination in bacteria.

Experimental ethnographic study of individuals with school-related learning problems.

Mechanism of anion transport in red blood cells.

Chemistry of some natural products.

Cell-free recombination system from yeast.

Adenylate kinase isoenzymes.

Major Equipment:

Four electron microscopes.

FACS 4 laser-simulated cell sorter.

Several tissue culture laboratories.

Computer system for quantitative analysis of polyacrylamide and agarose gels.

Nanosecond fluorescence spectrometer.

Peptide and nucleotide synthesis facility.

University of California, Santa Cruz

Program Director

Victor Rocha, Ph.D.
Associate Professor of Biology
Oakes College
University of California, Santa Cruz
Santa Cruz, California 95064
(408) 429-2835/2884/2893

Project Investigators Number of Student Participants

Victor Rocha, Ph.D.
(one graduate; three undergraduates)

Barry Bowman, Ph.D.
(one graduate; two undergraduates)

Eugene Cota-Robles, Ph.D.
(two graduates; two undergraduates)

Charles Ortiz, Ph.D.
(one graduate; two undergraduates)

Clifton Poodry, Ph.D.
(three undergraduates)

Frank Talamantes, Ph.D.
(three graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Studies of the involvement of cell shape change in the in vitro differentiation of mammary secretory epithelia.

Mechanisms of active transport in eukaryotic cells.

Ultrastructure of *Chromobacterium violaceum*.

Physiology of fasting in the young northern elephant seal.

Blast antigens and EBV-associated membrane antigens on human lymphocytes.

Control of pituitary prolactin secretion in pregnancy.

Major Equipment:

High-speed micro- and ultracentrifuges.

Gas-liquid chromatograph.

Gamma counter.

Light, dark-field, and phase-contrast electron microscopes.

Flame photometer.

UV spectrophotometer.

University of Southern Colorado

Program Director

Jerald L. Connelly, Ph.D.
Professor of Chemistry
Department of Chemistry
University of Southern Colorado
2200 Bonforte Boulevard
Pueblo, Colorado 81001
(303) 549-2571

Project Investigators Number of Student Participants

Jerald L. Connelly, Ph.D.
(two undergraduates)

Karmyn King, M.S.N.
(three undergraduates)

Paul Schnur, Ph.D.
(three undergraduates)

Rick M. Gardner, Ph.D.
(three undergraduates)

Suchoon S. Mo, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Role of copper in heme-biosynthesis.

Knowledge-compliance rates among Hispanic diabetics.

Pavlovian conditioning model of morphine tolerance.

Sensory and nonsensory aspects of obesity.

Hemispheric locus of time information in schizophrenia.

Major Equipment:

DEC PDT-8 minicomputer.

Three-channel tachistoscope.

Atomic absorption spectrophotometer.

Delaware State College

Program Director

Harriet R. Williams, M.S.
Professor and Chairman
Department of Chemistry
Delaware State College
Dover, Delaware 19901
(302) 736-4934

Project Investigators Number of Student Participants

Gustav A. Ofosu, Ph.D.
(four undergraduates)

Fatma M. Helmy, Ph.D.
(three undergraduates)

Donald R. Wilkinson, Ph.D.
(three undergraduates)

Albert B. Miller, Ph.D.
(five undergraduates)

Research Projects/ Major Equipment

Projects:

Effect of platinum pyrimidines on mitotic and enzyme activity.

Pancreatic enzymes and their lipid substrates.

Metabolites in urine of cystic fibrosis patients.

Detection versus control of stress-related variables.

Major Equipment:

Liquid-liquid chromatograph.

Pulse-wave velocity and heart rate monitor.

Digital integrator and printer.

RMS data accumulator and dual-channel analog recorder.

Gas chromatograph-mass spectrometer.

Electron microscope.

LKB ultramicrotome III and accessories.

Howard University

Program Director

George K. Littleton, Ph.D.
Associate Dean for Research Affairs
Graduate School of Arts and Sciences
Howard University
Washington, D.C. 20059
(202) 636-7977/7839

Project Investigators Number of Student Participants

Franklin R. Ampy, Ph.D.
Suresh Mohla, Ph.D.
(two graduates; one undergraduate)

Winston A. Anderson, Ph.D.
(one graduate; two undergraduates)

Anna-Lisa Barofsky, Ph.D.
(one graduate; two undergraduates)

Ray J. Butcher, Ph.D.
(one graduate; one undergraduate)

Robert G. Carpentier, Ph.D.
(one graduate)

Richard M. Duffield, Ph.D.
James W. Wheeler, Ph.D.
(one graduate; two undergraduates)

Sisir K. Dutta, Ph.D.
Ram Parsad, Ph.D.
(one graduate; one undergraduate)

Radhey S. Dwivedi, Ph.D.
Bing A. Chiang, Ph.D.
(one graduate; one undergraduate)

Felix Friedberg, Ph.D.
(one graduate; one undergraduate)

Raziel S. Hakim, Ph.D.
(one undergraduate)

Peter Hambright, Ph.D.
Raymond F. X. Williams, Ph.D.
(one graduate; two undergraduates)

Verle E. Headings, Ph.D.
(two graduates)

James A. Holloway, Ph.D.
(one graduate)

Paul F. Hudrlik, Ph.D.
Anne M. Hudrlik, Ph.D.
(one graduate; one undergraduate)

Govind J. Kapadia, Ph.D.
James W. Wheeler, Ph.D.
(two graduates)

Manickam Krishnamurthy, Ph.D.
(one graduate; one undergraduate)

Calbert A. Laing, Ph.D.
(one graduate; one undergraduate)

Michael J. Lewis, Ph.D.
(one graduate; one undergraduate)

Donna R. Maglott, Ph.D.
William R. Eckberg, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Hormonal regulation of environmental carcinogens.

Hormone and antagonist regulation of breast tumors.

CNS mapping of the estrogen-induced LH surge.

Iron III model complexes with intermediate spins.

Harmala compounds and cardiac membrane potentials.

Nonproteinaceous components of hymenopteran venoms.

Neurobiological effects of 500- to 1,000-MHz microwave radiations.

Biological effects of low-intensity microwave radiation on cells.

Primary structure of *Bacillus subtilis* alpha-amylase.

Cell programming in embryogenesis and metaplasia.

Porphyrin studies: synthesis, electrochemistry, and kinetics.

Heritable characteristics of primate F cells.

Electrophysiological studies on the spinothalamic tracts of the cat.

Prostaglandins and pheromones from silyl ketones.

Search for mutagens from herbal remedies and foods.

Aqueous solution studies of iron porphyrins.

Production of monoclonal antibodies by lymphocyte hybridomas.

Aging effects on brain stimulation reward and the role of dopamine.

Actin regulation in early sea urchin development.

(Continued on next page)

Howard University—Continued

	Suresh Mohla, Ph.D. (one graduate)	RNA polymerase as a parameter of hormone-dependent breast cancer.
	Gwen-Marie Moolenaar, Ph.D. (one graduate; one undergraduate)	Involvement of raphe nuclei in sensory mechanisms.
	Salvatore Rapisardi, Ph.D. (one graduate; one undergraduate)	Ontogenesis of lateral geniculate neurons in cats.
	Robert C. Rosenberg, Ph.D. (two undergraduates)	Studies of urate oxidase.
	William M. Southerland, Ph.D. (two graduates)	Studies on the mechanisms of sulfur oxide toxicity.
	Carlyle B. Storm, Ph.D. (one graduate; two undergraduates)	Phenylalanine and pteridine metabolism in PKU.
	Harry C. Wong, Ph.D. Bernell Coleman, Ph.D. (two graduates)	Effect of Valium on atherosclerosis in cockerels.
	John C. H. Yun, Ph.D. (one undergraduate)	Acetylcholine and prostaglandins in sodium excretion.
	Theodore A. Bremner, Ph.D. (one graduate; one undergraduate)	Mitochondrial involvement in plant tumor induction.
		Major Equipment:
		Gas chromatograph-mass spectrometer.
		Bruker 250 MHz nuclear magnetic resonance spectrometer.
		Electron spin resonance spectrometer.

University of the District of Columbia

Program Director

Norman Kondo, Ph.D.
Professor of Chemistry
University of the District of Columbia
1331 H Street, N.W.
Washington, D.C. 20008
(202) 727-2184

Project Investigators Number of Student Participants

Norman Kondo, Ph.D.
(two undergraduates)

David Blackman, Ph.D.
(two undergraduates)

Carolyn Cousin, Ph.D.
(two undergraduates)

Marian Johnson-Thompson, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Conformational studies of constituents of nucleic acids.

Conformation of yeast invertase glycoprotein.

Schistosoma mansoni: a comparative study of in vitro and in vivo schistosomules.

Effect of 5-azacytidine on the biochemical and biological activity of simian virus 40.

Major Equipment:

Varian NMR spectrometer FT-80A.

AEI Corinth 274 electron microscope.

Perkin-Elmer 460 atomic absorption spectrophotometer.

Bethune-Cookman College

Program Director

Richard F. Copeland, Ph.D.
Professor of Chemistry
Division of Science and Mathematics
Bethune-Cookman College
Daytona Beach, Florida 32015
(904) 255-1401 x311

Project Investigators Number of Student Participants

Wu-Nan Kuo, Ph.D.
(four undergraduates)

Richard F. Copeland, Ph.D.
(four undergraduates)

Munir A. Rahmani, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Mammalian cyclic nucleotide-dependent protein kinase modulators.

Structure and bonding of platinum II nucleotide complexes.

Biochemical genetics of *Tribolium castaneum.*

Major Equipment:

Automated four-circle, single-crystal, X-ray diffractometer.

Multichannel analyzer system.

Florida A & M University

Program Director

Johnnie L. Early, Jr., Ph.D.
Assistant Professor of Pharmacology and Toxicology
School of Pharmacy
Box 367
Florida Agricultural and Mechanical University
Tallahassee, Florida 32307
(904) 599-3301/3910

Project Investigators Number of Student Participants

James L. Day, Ph.D.
(two graduates; two undergraduates)

Johnnie L. Early, Jr., Ph.D.
(two graduates; two undergraduates)

Thomas J. Fitzgerald, Ph.D.
(one graduate; two undergraduates)

Maurice S. Holder, Ph.D.
(one graduate; two undergraduates)

Henry J. Lee, Ph.D.
(one graduate; two undergraduates)

Peter U. Nwangwu, Pharm.D., Ph.D.
(one graduate; two undergraduates)

Abraham P. Ollapally, Ph.D.
(four undergraduates)

A. Subbayya Shetty, Ph.D.
(two graduates; two undergraduates)

Ralph W. Turner, Ph.D.
(one graduate; two undergraduates)

Research Projects/ Major Equipment

Projects:

Pharmacokinetics of misonidazole using adjuvant therapy.

Effect of heavy metals on isolated hepatocytes.

Colchicine derivatives as anticancer agents.

Angiotensin II, normal cardiac growth and hypertrophy.

Derivatives of corticosteroid metabolites.

Development of new antiarrhythmic drugs.

Unsaturated ketodeoxy hexosyl halouracils as anticancer agents.

Tryptophan metabolism: Role of enzymes and metabolites on mutagenesis and carcinogenesis.

Cadmium-113 NMR and structural studies of ceruloplasmin.

Major Equipment:

Beckman L5-65 ultracentrifuge.

Electron microscope facility.

Gas chromatograph-mass spectrometer AEI-MS30, data system AEI-DS30.

High-speed liquid chromatograph.

Gas-liquid chromatographs.

Nuclear magnetic resonance spectrometer.

UV-visible, infrared, and atomic absorption spectrophotometers.

Spectrophotofluorometer.

X-ray diffractometer.

Medium quartz spectrograph.

Potentiostat-galvanostat.

Liquid scintillation counter.

Controlled animal environmental chamber.

PROPHET: an interactive, graphics-based computer system for biomedical research.

Albany State College

Program Director

Clifford L. Smith, Ph.D.
Professor of Chemistry
Department of Chemistry
Albany State College
Albany, Georgia 31705
(912) 439-4030

Project Investigators Number of Student Participants

Ernest W. Benson, Ph.D.
(three undergraduates)

Clifford L. Smith, Ph.D.
Edwin A. Green, Ph.D.
(four undergraduates)

Ora E. Lockley, Ed.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Induction of urease regulatory gene mutants by carcinogenic agents.

Preparation of silicones with potential biomedical applications.

Effect of tyrosine and trystophan on hypertension in rats.

Major Equipment:

Flame emission/atomic absorption, infrared, nuclear magnetic, and UV-visible spectrophotometers.

Gas chromatographs.

Reichert cytophotometer.

Cryostat.

Atlanta University Center, Inc.

Program Director

Joe Johnson, Jr., Ph.D.
Professor of Chemistry
Atlanta University Center, Inc.
223 Chestnut Street, S.W.
Atlanta, Georgia 30314
(404) 525-5668 or 522-8980

Participating Institutions:

Atlanta University
223 Chestnut Street, S.W.
Atlanta, Georgia 30314
(404) 681-0251

Clark College
240 Chestnut Street, S.W.
Atlanta, Georgia 30314
(404) 681-3080

Morehouse College
223 Chestnut Street, S.W.
Atlanta, Georgia 30314
(404) 681-2800

Morehouse College
School of Medicine
223 Chestnut Street, S.W.
Atlanta, Georgia 30314
(404) 681-2800

Project Investigators Number of Student Participants

Judith Lumb, Ph.D.
(two graduates; two undergraduates)

John K. Haynes, Ph.D.
(two graduates; one undergraduate)

Errol Archibold, Ph.D.
Ronald J. Sheehy, Ph.D.
Clarence Clark, Ph.D.
(one graduate)

Nripendra Bose, Ph.D.
Joe Johnson, Ph.D.
(two graduates)

Clarence Clark, Ph.D.
Errol Archibold, Ph.D.
(one graduate; one undergraduate)

John H. Hall, Ph.D.
Subhash Bhatia
Nripendra Bose, Ph.D.
Joe Johnson, Ph.D.
(two graduates; one undergraduate)

Gordon Leitch, Ph.D.
Raymond Hayes, Ph.D.
(two graduates)

Yitbarek Habte-Mariam, Ph.D.
(two graduates)

Research Projects/ Major Equipment

Projects:

Derepression in mouse lymphomas.

Characterization of irreversibly sickled membranes.

Relationship of R6K plasmid DNA to the chromosome of *E. coli*.

Synthesis of cap analogs and their biological function.

Analysis of plasmid DNA in *E. coli* and *Salmonella typhimurium*.

Laser-Raman spectroscopy of biological molecules.

Mucin and electrolyte secretions in the small intestine.

Studies on the medicinal actions of anthracyclines.

(Continued on next page)

Atlanta University Center, Inc.—Continued

Morris Brown College 643 Martin Luther King, Jr., Drive, S.W. Atlanta, Georgia 30314 (404) 525-7831 Spelman College 350 Spelman Lane, S.W. Atlanta, Georgia 30314 (404) 681-3643	Rosalyn Patterson, Ph.D. Henry McBay, Ph.D. (three graduates) Roosevelt Thedford, Ph.D. Judith Lumb, Ph.D. Ronald Sheehy, Ph.D. (two graduates; two undergraduates) G. Scott Owen, Ph.D. (three graduates) John Browne, Ph.D. (two graduates) Raymond Hayes, Ph.D. (two graduates) Robert Holland, Ph.D. Jane Downer, Ph.D. (two graduates) William LeFlore, Ph.D. (one graduate; one undergraduate) David R. Mann, Ph.D. (two graduates) Cyril Moore, Ph.D. (four graduates) Henrie Turner, Ph.D. Joe Johnson, Ph.D. (two graduates; two undergraduates) Jeanne Stahl, Ph.D. (one graduate; two undergraduates) Franklin Hamilton, Ph.D. (one graduate)	Cytogenetic and electron spin resonance studies of free radicals in vitro. Alkylated polyribonuclectide synthesis and activity. Development of a laboratory data system. In vitro biosynthesis of galactosyl transferase. Calcification of nonmineralized tissues in vitro. Studies on the nucleus accumbents. Histochemistry and cytobiochemistry of larval trematodes. Regulatory action of ACTH in primate reproduction. Copper feeding of Mo^{br} mice; brain function and hypoxic neonates. Characterization and study of transmethylases in *Physarum*. Early brain damage and brain and behavioral development. Ribonucleotide reductase activity in *P. stutzeri*. **Major Equipment:** Bruker 250 MHz nuclear magnetic resonance spectrometer. Beckman model E analytical ultracentrifuge. DuPont 21-490 gas chromatograph-mass spectrometer. High-pressure liquid chromatographs. Amino acid analyzer. Liquid scintillation counters. Cary 17 spectrophotometer. Infrared spectrophotometers. Spectropolarimeter. DEC 11/40 computer system. Raman spectrophotometer. ETEC Omniscan electron miscroscope. Transmission electron microscopes. DEC 2060 computer. PROPHET computer terminal.

Fort Valley State College

Program Director

Dan T. Black, Ph.D.
Professor of Biology
Fort Valley State College
Box 457
Fort Valley, Georgia 31030
(912) 825-6241

Project Investigators Number of Student Participants

Dan T. Black, Ph.D.
Clinton H. Dixon, Ph.D.
(six undergraduates)

Research Projects/ Major Equipment

Projects:

In vitro effects of insulin, sodium and calcium cyclamates, and other compounds normal to human consumption and exposure.

Major Equipment:

Coulter counter.

Laminar flow sterile hood.

CO_2 incubator for tissue cultures.

Inverted tissue culture microscope.

Tissue culture facilities.

Savannah State College

Program Director

Chukwudi Obi Emeh, Ph.D.
Associate Professor of Biology
Division of Natural Sciences
State College Branch
P.O. Box 20503
Savannah State College
Savannah, Georgia 31404
(912) 356-2313

Project Investigators Number of Student Participants

Chukwudi Obi Emeh, Ph.D.
Frissel Roy Hunter, Ph.D.
Harpal Singh, Ph.D.
Margaret C. Robinson, Ph.D.
(12 undergraduates)

Frissel Roy Hunter, Ph.D.
(five undergraduates)

Mancherry P. Menon, Ph.D.
Govindan K. Nambiar, Ph.D.
Willie G. Tucker, Ph.D.
(five undergraduates)

Bernard L. Woodhouse, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Chemically induced biochemical and ultrastructural changes in hamster and mouse sperm.

Drug effects on enzyme systems of *Euglena gracilis*.

Radioimmunoassay for lactate dehydrogenase isoenzymes.

Possible mechanisms of action of timolol maleate.

Major Equipment:

Zeiss 9S2 transmitting electron microscope.

Beckman LC100 scintillation spectrometer.

Beckman LC5 ultracentrifuge.

Equipment and accessories for cell culture.

Cryostat Tissue Tek ultramicrotome and complete accessories.

Sanborn polygraph and recorder.

University of Hawaii at Hilo

Program Director

Jerry L. Johnson
Associate Professor of Psychology
University of Hawaii at Hilo
P.O. Box 1357
Hilo, Hawaii 96720
(808) 961-9439

Project Investigators Number of Student Participants

R. Lee Howard, Ph.D.
(four undergraduates)

Daniel E. Brown, Ph.D.
(four undergraduates)

John G. Chan, Ph.D.
(three undergraduates)

Don E. Hemmes, Ph.D.
(three undergraduates)

E. H. Mercer, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Undernutrition and learning: environmental-behavioral relations.

Health and acclimatization of commuters in response to altitude.

Salmonella in freshwater pond aquaculture.

Ultrastructure of calcium-binding sites in secretory cells.

Histogenesis of larval amphibian epidermis.

Major Equipment:

Nikon SMZ stereomicroscope.

Zeiss 9S2 electron microscope.

PDP11-34 minicomputer.

Tektronix 5113 dual-beam storage oscilloscope.

Kopf custom-built rat spinal stereotactic unit.

Quintron Duograph gas chromatograph and recorder.

University of Hawaii at Manoa

Program Director

Frederick C. Greenwood, Ph.D., D.Sc.
Director
Pacific Biomedical Research Center
University of Hawaii at Manoa
1993 East-West Road
Honolulu, Hawaii 96822
(808) 948-8838

Project Investigators Number of Student Participants

Gillian Bryant-Greenwood, Ph.D.
(one undergraduate)

John Carlson, Ph.D.
(one undergraduate)

David Crowell, Ph.D.
(one undergraduate)

Arnold Feldman, Ph.D.
(one undergraduate)

Michael Hadfield, Ph.D.
(one undergraduate)

Yoshitsugi Hokama, Ph.D.
(three undergraduates)

Ronald Johnson, Ph.D.
(one undergraduate)

Research Projects/ Major Equipment

Projects:

Effect of relaxin on the mechanical and electrical activity of the rat uterus in vivo.

Multisite EMG training.

Development of human brain-stem-evoked responses in very low birth weight infants.

Hyperthermic treatment of MULv-induced YAC lymphoma implanted in A/J or CAF I/J female mice.

Relationship between cell size, body size, and function in giant neurons.

Effect of levamisole and liver beta-protein (peroxidase) on platelet aggregation.

Reliability of measures of hemispheric efficiency.

University of Hawaii at Manoa—Continued

	Fred Kamemoto, Ph.D. (one undergraduate)	Hormones and osmoregulation in crabs.
	Robert Kinzie III, Ph.D. (one undergraduate)	Infection and epidemiology of an algal/invertebrate symbiosis.
	Howard Mower, Ph.D. (two undergraduates)	Studies of carcinogenic substances in human feces.
	Robert Nakamura, Ph.D. (one undergraduate)	Animal science pathology research.
	Eduardo Porta, Ph.D., M.D. (one undergraduate)	Stereological analysis of cell organelles by electron microscopy.
	Beverly Jane Rogers, Ph.D. (two undergraduates)	Capacitation of and fertilization by mammalian spermatozoa.
	Shoji Shibata, Ph.D. (one undergraduate)	Pharmacological study of a novel cardiotonic polypeptide from sea anemone and biologically active substances from other natural products.
	Barbara Siegel, Ph.D. (one undergraduate)	Physiological and genetic adaptations of plants to saline stress.
	Sanford Siegel, Ph.D. (one undergraduate)	Environmental toxicology of volcanic gases: mercury, selenium, arsenic, and sulfur interactions in plants and fungi.
		Major Equipment:
		Radiotelemetry equipment.
		Gamma 300 counter.
		Liquid scintillation counters.
		BW-2 spectrofluorometer fluorescent microscope.
		Preparative ultracentrifuge.
		Gamma counter.
		Electrophysiological recording equipment.
		Philips 300 electron microscope.
		Access to IBM 370/158 computer.
		NMR facilities.
		Spectrophotometers: variety of models for chemical and biological application.
		Scintillation counters.
		High-pressure gas and liquid chromatographs.
		X-ray diffractometer.

Chicago State University

Program Director

Augusta A. Mylroie, Ph.D.
Professor of Chemistry
Department of Physical Sciences
Chicago State University
Chicago, Illinois 60628
(312) 995-2491

Project Investigators Number of Student Participants

Susan H. Ford, Ph.D.
(two undergraduates)

Robert E. Hollins, Ph.D.
Augusta A. Mylroie, Ph.D.
Linda Rosselli-Austin, Ph.D.
(two graduates; six undergraduates)

Bonnie Sampsell, Ph.D.
(one graduate; two undergraduates)

Warren V. Sherman, Ph.D.
(two undergraduates)

Christine D. Wu-Yuan, Ph.D.
(one graduate; one undergraduate)

Research Projects/ Major Equipment

Projects:

Biosynthesis of vitamin B_{12}.

Effects of lead and trace metals on behavior, brain development, and biochemical parameters in rats.

Adaptive significance of thermostability variants of alcohol dehydrogenase in *Drosophila melanogaster.*

Photochemistry of bacteriorhodopsin.

Glucan-induced cellular agglutination of *Streptococcus mutans:* its mechanisms and involvement in the formation of dental plaque and dental caries.

Major Equipment:

Atomic absorption spectrophotometer.

Polarography.

Autoradiography: behavioral testing.

Genetic analysis using marker stocks and recombination data in *Drosophila melanogaster.*

Kentucky State University

Program Director

Gertrude C. Ridgel, Ph.D.
Chairman
Department of Biology
Kentucky State University
Frankfort, Kentucky 40601
(502) 574-6066

Project Investigators Number of Student Participants

George W. Brown, Ph.D.
(two undergraduates)

Tejindar S. Kochhar, Ph.D.
(two undergraduates)

Gertrude C. Ridgel, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Application of immunofluorescence to study the ecology of *Clostridium botulinum*, using antigens from protoplasts and stabilized L forms.

Induction of sister chromatid exchange by various chemical agents in cultured mammalian cells.

Biological effects of environmental insults in vitro on rat cells and tissues, using amino acid incorporation and protein synthesis as indexes to determine biological effects.

Major Equipment:

Inverted tissue culture microscope.

Searle 6868 Isocap/300 liquid scintillation system.

Epifluorescence and light bright-field microscope.

Dillard University

Program Director

Joyce M. Verrett, Ph.D.
Professor of Biology
Dillard University
2601 Gentilly Boulevard
New Orleans, Louisiana
70122
(504) 283-8822

Project Investigators Number of Student Participants

M. Sue Ivens, Ph.D.
(three undergraduates)

Boake Plessy, Ph.D.
(four undergraduates)

Joyce M. Verrett, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Evaluation, specificity, and significance of skin testing antigens of *Sporothrix schenckii*; attempts to isolate etiologic agents of the systemic fungal diseases from the soil in endemic areas in Louisiana and Mississippi.

Characterization of corneal mucoproteins.

Water balance in the American cockroach.

Major Equipment:

Liquid scintillation counter.

Southern University

Program Director

Fred A. Christian, Ph.D.
Professor of Biology and Director
Health Research Center
Southern University
Baton Rouge, Louisiana 70813
(504) 771-4243

Project Investigators Number of Student Participants

Fred A. Christian, Ph.D.
(one graduate; two undergraduates)

Earl Doomes, Ph.D.
(one graduate; two undergraduates)

Richard Echols, Ph.D.
Robert Miller, Jr., Ph.D.
(one graduate; three undergraduates)

Rose Glee, Ph.D.
(one graduate; two undergraduates)

Arnold Smalley, Ph.D.
(one graduate; one undergraduate)

Mildred Smalley, Ph.D.
(three undergraduates)

Fitzgerald Spencer, Ph.D.
(one graduate; one undergraduate)

Dorothy Thompson, Ph.D.
(one graduate; one undergraduate)

Research Projects/ Major Equipment

Projects:

Effect of selected herbicides and insecticides on biological characteristics of *Fasciola hepatica*.

Carcinogen-like bridge annuli.

Effect of low concentration of pesticides on lipid synthesis and thiamine absorption and retention.

Toxicity of brominated flame retardants.

Nonvolatile organic contaminants in drinking water.

Relation of selected essential metals to hypertension and blood-brain barrier permeability in rats.

Effect of captan and ziram on reproduction in rats and their concentration in the reproductive tissues.

Biochemical changes in soft fruits in relation to the Mucorales.

Major Equipment:

Atomic absorption spectrophotometer.

Electron microscope.

Cary 219 spectrophotometer.

Perkin-Elmer infrared spectrometer.

Perkin-Elmer sigma analyzer 1, equipped with TCD, ECD, FID, and NPD.

Scintillation counter and fraction collector.

Xavier University of Louisiana

Program Director

Portia U. Ashman, Ph.D.
Professor of Biology
Xavier University of Louisiana
7325 Palmetto Street
New Orleans, Louisiana
70125
(504) 486-7411 x526/650

Project Investigators Number of Student Participants

Mary Carl Malmstrom, Ph.D.
(two undergraduates)

Portia U. Ashman, Ph.D.
(four undergraduates)

Patrick A. Miederhoff, Ph.D.
(two undergraduates)

Richard F. Ochillo, Ph.D.
(four undergraduates)

Raman Sankar, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Protein electrode development and assay studies.

Biochemical pathology and chronopathology in *Microtus montanus* infected with *Trypanosoma brucei* and *T. gambiense*.

Effect of drug abuse education programs on participant attitudes.

Toxicological and pharmacological studies of natural toxins and some of their analogs.

Alterations in the permeability of the blood-brain barrier with aging.

Major Equipment:

Ultracentrifuge.

High-pressure gas chromatograph.

Liquid scintillation counter.

Dynograph.

University of Maryland, Eastern Shore

Program Director

Joseph Wutoh, Ph.D.
Associate Professor of Biology
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 228-8200

Also:

Associate Professor
Center for Environmental and Estuarine Studies
University of Maryland
Cambridge, Maryland 21613
(301) 228-8200

Project Investigators Number of Student Participants

Joseph Wutoh, Ph.D.
(four undergraduates)

Jack Pinion, Ph.D.
(three undergraduates)

Eugene Bass, Ph.D.
(two undergraduates)

Marianito Albano, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Culturing and toxigenesis of marine dinoflagellates.

Isolation and purification of toxins from various marine dinoflagellates.

Physiological, pharmacological, and toxicological investigations of marine dinoflagellate extracts.

Effect of marine dinoflagellate extracts on selected microorganisms.

Major Equipment:

MPF-44A spectrofluorometer.

Dynograph (four channels).

Rate interval analyzer with signal conditioner.

High-performance liquid chromatograph with variable wavelength UV detector.

Wayne State University

Program Director

James M. Jay, Ph.D.
Professor
Department of Biological Sciences
Wayne State University
Detroit, Michigan 48202
(313) 577-2880/2249

Project Investigators Number of Student Participants

Joseph C. Dunbar, Ph.D.
(two undergraduates)

Robin Barraco, Ph.D.
(one undergraduate)

Robert F. Berman, Ph.D.
(one undergraduate)

James M. Jay, Ph.D.
(seven graduates; two undergraduates)

Stephanie Lucas, M.D.
(two undergraduates)

Seymour Levine, Ph.D.
Ilene Montgomery, Ph.D.
(two undergraduates)

Mary A. Marrazzi, Ph.D.
(three undergraduates)

K. Mayeda, Ph.D.
(two undergraduates)

Morton Raban, Ph.D.
(one undergraduate)

Vera Righthand, Ph.D.
(two undergraduates)

Robert S. Shepard, Ph.D.
(one graduate)

Albert Siegel, Ph.D.
(two undergraduates)

Curtis J. Swanson, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Physiology of islet cells and their secretions.

Direct determination of angiotensin in the brain.

Role of opioids in the kindling model of epilepsy.

Effect of food-borne microorganisms on endotoxins.

Role of insulin and growth hormone in the pathogenesis of diabetic microangiopathy.

Respiratory syncytial virus bronchiolitis: pathogenesis and host response.

Central nervous system glucostat and insulin hypoglycemia.

Linkage analyses in Huntington's disease.

New method for absolute configurations of chiral alcohols and amines.

Role of viral proteins in early stages of infection.

Early and long-term effects of tricuspid valvulectomy.

Evolution of ribosomal DNA.

Ontogenetic assay of a new dystrophic mouse.

Alcorn State University

Program Director

Alice M. Russell, Ph.D.
Associate Professor of Biology
P.O. Box 1259
Alcorn State University
Lorman, Mississippi 39096
(601) 877-2911/3711

Project Investigators Number of Student Participants

Alice M. Russell, Ph.D.
(four undergraduates)

Joseph Russell, Ph.D.
(two graduates; two undergraduates)

Troy Stewart, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

In vivo and in vitro effects of chemical pollutants on macrophage structure and function.

Toxicity and photochemical studies on chlorofluorocarbons.

Quantitative studies on the various metabolites of flurazepam in the body fluids and tissues of white rats.

Major Equipment:

Carbon-hydrogen analyzer.

Nitrogen analyzer.

Beckman UV-visible spectrophotometer.

DuPont 21-491B gas chromatograph-mass spectrometer.

Ultracentrifuge.

FT nuclear magnetic resonance spectrophotometer R-60.

High-pressure liquid chromatograph.

Atomic absorption spectrophotometer.

Polygraph.

X-ray diffraction spectrometer.

Electron spin resonance spectrometer.

Jackson State University

Program Director

Robert W. Mack, Ph.D.
Professor of Biology
Jackson State University
Jackson, Mississippi 39217
(601) 968-2202

Project Investigators Number of Student Participants

Vernon G. Archer, Ph.D.
(one graduate; one undergraduate)

Stephen F. Bollinger, Ph.D.
(three undergraduates)

A. Derick Dalhouse, Ph.D.
(two undergraduates)

Bennye S. Henderson
(one graduate; one undergraduate)

Robert W. Mack, Ph.D.
Richard H. Sullivan, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Estrous behavior produced in ovariectomized rats by hypothalamic implants of testosterone.

Neurological impedance as a correlate of sexual behavior.

Functional reciprocity between the septal and amygdaloid nuclei and their control of salt appetite.

Steroidogenic and pressor effects of the angiotensins.

Chemotherapeutic potential of metallothiopurines.

(Continued on next page)

Jackson State University—Continued

	Abdul Mohamed, Ph.D. (one graduate; two undergraduates)	Microbial control of *Culex pipiens* and *C. quinquefasciatus*.
	Fred R. S. Nelson, Ph.D. (one graduate; two undergraduates)	Potential vectors of *Dirofilaria* species in relation to human infection.
	Eric A. Noe, Ph.D. (one graduate; two undergraduates)	Conformational studies by dynamic nuclear magnetic resonance spectroscopy.
	Charles H. Spann, Ph.D. (one graduate; one undergraduate)	Gram-negative bacteremic shock in scorbutic animals.
	Hiroyasu Tachikawa, Ph.D. (one graduate; two undergraduates)	Electrochemical and solid-state studies of phthalocyanines and cytochrome c.
	Robert Toler, Ph.D. (one graduate)	Habituation of the rapid escape response of the earthworm *Lumbricus terrestris:* A neuroethological characterization of the reflex and a study of the relationship between synaptic lability and behavior.
	Charles H. Trottman, Ph.D. (one graduate; three undergraduates)	Effects of toxaphene and its components on hepatic subcellular organelles.
	John E. Uzodinma, Ph.D. (one graduate; one undergraduate)	Biochemical and cytotoxic effects of Kepone, and Mirex and its photoproducts in cultured liver cells.
	Yohn S. Yang (two undergraduates)	Charge transfer photochemistry and photophysics of organochromium III complexes.
		Major Equipment:
		Bruker WH-90DS FT nuclear magnetic resonance spectrometer.
		DuPont 321 Dimaspec gas chromatograph-mass spectrometer.
		Beckman 119C amino acid analyzer.
		Philips 201 electron microscope.
		Liquid scintillation counter.
		Beckman L5-65 ultracentrifuge.
		Perkin-Elmer gas chromatograph.
		Perkin-Elmer high-pressure liquid chromatograph.

Tougaloo College

Program Director

Asoka Srinivasan, Ph.D.
Chairman
Division of Natural Sciences
Tougaloo College
Tougaloo, Mississippi 39174
(601) 956-7943

Project Investigators Number of Student Participants

Asoka Srinivasan, Ph.D.
(two undergraduates)

Bam Mehrotra, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Control of insect reproduction: development and activity of sex pheromone-producing cells of *Lepidoptera*.

Effect of organochlorines on mitochondrial subfractions.

Major Equipment:

L5-50 Beckman ultracentrifuge.

LS-100C Beckman scintillation counter.

Hewlett-Packard 5700 gas-liquid chromatograph with FID.

Lincoln University

Program Director

Nathan H. Cook, Ph.D.
Professor and Head
Department of Natural Sciences and Mathematics
Lincoln University
820 Chestnut
Jefferson City, Missouri 65101
(314) 751-2325 x229

Project Investigators Number of Student Participants

Nathan H. Cook, Ph.D.
(two undergraduates)

William M. Beneke, Ph.D.
Benjamin F. Timson, Ph.D.
Barbara K. Paulsen, M.S.
(two undergraduates)

Herman T. Miller, Ph.D.
(two undergraduates)

Annie M. Wells, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

In vitro effects of certain chemical carcinogens.

Weight loss and health: the role of diet and exercise.

Studies on the humoral factor from hypertensive animals.

Stress and hypertensive development in rat models.

Major Equipment:

Coulter counter.

Research-grade microscope with photo system.

Hydrostatic weighing autopsy scale.

Microcomputer.

College of Santa Fe

Program Director	Project Investigators Number of Student Participants	Research Projects/ Major Equipment
Byron C. Jones, Ph.D. Associate Professor of Psychology College of Santa Fe St. Michael's Drive Santa Fe, New Mexico 87501 (505) 473-6011	Byron C. Jones, Ph.D. Diane Dudzinski, Ph.D. Edward Reyes, Ph.D. (five undergraduates) Richard Wark, Ph.D. Denise Paz, Ph.D. (four undergraduates)	**Projects:** Multidisciplinary neuroscience research. Interdisciplinary research in aging. **Major Equipment:** High-performance liquid chromatograph. Y-mazes with microprocessors and event recorders.

Navajo Community College

Program Director	Project Investigators Number of Student Participants	Research Projects/ Major Equipment
James K. McNeley, Ph.D. Instructor Social Behavioral Sciences Navajo Community College Shiprock Campus Shiprock, New Mexico 87420 (505) 368-5730	James K. McNeley, Ph.D. Gordon Mark Schoepfle, Ph.D. (six undergraduates) Lora Mangum Shields, Ph.D. (three undergraduates) Lora Mangum Shields, Ph.D. (one undergraduate)	**Projects:** A study of Navajo cultural patterns of alcohol and other drug use. An investigation of the incidence of beta-hemolytic streptococcal (group A) infections among the Navajo and their aftereffects, a high-priority disease situation that is identifiable and preventable. Assessment of radium-226 and polonium-210 in human teeth and in sheep bone, Navajo uranium district.

New Mexico Highlands University

Program Director

Joseph R. Flippo, Ph.D.
Professor
New Mexico Highlands University
Las Vegas, New Mexico 87701
(505) 425-7511 x379

Project Investigators Number of Student Participants

John Spencer, Ph.D.
(one graduate; two undergraduates)

Joseph R. Flippo, Ph.D.
(one graduate; four undergraduates)

Ward Rodriguez, Ph.D.
(one graduate; three undergraduates)

Anthony F. Gallegos, Ph.D.
(one graduate; two undergraduates)

Henry Schreiber, Ph.D.
(one graduate; two undergraduates)

Research Projects/ Major Equipment

Projects:

Yersinia enterocolitica: prevalence in stool specimens in New Mexico.

Etiology and treatment of aggression in children.

Reinforcer and temporal parameters in associative learning.

Toxicology of coal fly ash on freshwater organisms.

Effect of early experience on amphetamine sensitization.

Major Equipment:

Color videotaping and editing equipment.

Liquid scintillation counter.

Solid-state programming and recording equipment.

Infrared, nuclear magnetic resonance, atomic absorption, and UV-visible spectrometers.

High-pressure liquid chromatograph.

Transmission electron microscope.

Magnusen M-80 computer system.

Differential thermal analysis apparatus.

X-ray diffraction apparatus.

New Mexico State University

Program Director

Glenn D. Kuehn, Ph.D.
Professor of Chemistry
New Mexico State University
Box 3C
Las Cruces, New Mexico
88003
(505) 646-1015

Project Investigators Number of Student Participants

Vincente D. Villa, Ph.D.
(three undergraduates)

Marvin H. Bernstein, Ph.D.
(one graduate; three undergraduates)

Edmund R. Casillas, Ph.D.
(one graduate; three undergraduates)

James H. Hageman, Ph.D.
(one graduate; three undergraduates)

Glenn D. Kuehn, Ph.D.
(two graduates; three undergraduates)

Ralph B. Turner, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Fermentative metabolism and morphogenesis in *Mucor.*

Functions of the respiratory system in birds.

Biochemical processes in male reproduction.

Serine protease function in sporulation of *Bacillus subtilis.*

Protein kinase studies in *Physarum polycephalum.*

Role of proteolytic enzymes in biochemical regulation in embryogenesis.

Major Equipment:

Electron microscope center.

200 MHz FT nuclear magnetic resonance spectrometer.

PROPHET computer facility.

University of Albuquerque

Program Director

Curtis R. Pantle, Ph.D.
Department of Natural Science and Mathematics
Discipline of Biology
University of Albuquerque
St. Joseph Place, N.W.
Albuquerque, New Mexico
87140
(505) 831-1111 x225

Project Investigators Number of Student Participants

Curtis R. Pantle, Ph.D.
(three undergraduates)

Clare Sun, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Function in nutrient- and oxygen-free isolated cardiac myocytes.

Mutagenicity of environmental chemicals in *Neurospora crassa.*

Major Equipment:

Atomic absorption spectrometer.

Refrigerated preparative centrifuge.

University of New Mexico

Program Director

Alonzo C. Atencio, Ph.D.
Assistant Dean
School of Medicine
University of New Mexico
Albuquerque, New Mexico
87131
(505) 277-2728

Project Investigators Number of Student Participants

William G. Dail, Jr., Ph.D.
(two undergraduates)

Robert O. Kelley, Ph.D.
(one undergraduate)

Heather M. Murray, Ph.D.
(two undergraduates)

John L. Omdahl, Ph.D.
(one undergraduate)

David L. Vander Jagt, Ph.D.
(one undergraduate)

Terence J. Scallen, M.D., Ph.D.
(two undergraduates)

Oswald G. Baca, Ph.D.
(two undergraduates)

Paul R. Kerkof, Ph.D.
(two undergraduates)

Tokio Kogoma, Ph.D.
(one graduate; one undergraduate)

John L. Trujillo, Ph.D.
(one graduate; one undergraduate)

William F. Coleman, Ph.D.
(one graduate; two undergraduates)

Cary J. Morrow, Ph.D.
(one undergraduate)

Thomas M. Niemczyk, Ph.D.
(one undergraduate)

Robert E. Tapscott, Ph.D.
(two undergraduates)

Sei Tokuda, Ph.D.
(one graduate; one undergraduate)

Andrew Martinez, Ph.D.
(two undergraduates)

Barry P. Avner, Ph.D.
(one undergraduate)

William C. Buss, Ph.D.
(one undergraduate)

Edward Reyes, Ph.D.
(two undergraduates)

Charles L. Beckel, Ph.D.
(one undergraduate)

William R. Galey, Ph.D.
(two undergraduates)

L. Donald Partridge, Ph.D.
(one undergraduate)

Stephen C. Wood, Ph.D.
(one undergraduate)

Research Projects/ Major Equipment

Projects:

Studies of adrenergic terminals in autonomic ganglia.

Biology of the aging cell surface.

Central monoaminergic motor pathways in *Tupaia* and *Galago*.

Cellular and molecular mechanisms of vitamins and hormone action.

Enzymology of glutathione-requiring enzymes.

Regulation of cholesterol biosynthesis.

Interaction of *Coxiella burnetii* with cells of low phagocytic activity.

Action of thyroid-stimulating hormones on thyroid gland cells in culture.

Genetic and biochemical studies on stable DNA replication in *Escherichia coli*.

Control of carbohydrate metabolism in liver.

Chemistry of chromium III amino acid complexes.

Synthesis of cholesterol biosynthesis inhibitors.

Glow discharge as a gas chromatographic detector.

Stereochemical studies on vanadyl IV compounds.

Immunotherapy against syngeneic murine tumors.

Nuclear cytoplasm interaction in aging human diploid cells.

Desensitization in pulmonary smooth muscle.

Effect of aminoglycoside antibiotics on protein synthesis.

Effects of alcohol on brain gamma glutamyl transpeptidase isoenzymes.

Theoretical study of phosphate-containing biological molecules.

Studies of red blood cell membrane transport and structure.

Steady-state electrical characteristics of neuron membranes.

Regulation of respiratory function in nucleated red blood cells.

(Continued on next page)

University of New Mexico—Continued

	Gerald K. Weiss, Ph.D. Dennis M. Feeney, Ph.D. (one graduate; one undergraduate)	Blood pressure modulation of epileptiform activity.
	Donald V. Priola, Ph.D. (one undergraduate)	Intrinsic innervation of the heart.
	Fritz Allen, Ph.D. (one undergraduate)	Electric dichroism of double-stranded RNA.
	Larry L. Barton (two undergraduates)	Anaerobic respiration in sulfur-reducing bacteria.
	J. L. Born, Ph.D. (two undergraduates)	Reductive metabolism of nitroimidazole radiosensitizers.
	Larry E. Davis, M.D. (one undergraduate)	Experimental influenza toxicity and Reye's syndrome.
	Donald W. Duzynski, Ph.D. (two undergraduates)	Studies of host and site specificity of coccidians.
	Dennis M. Feeney, Ph.D. (one graduate; two undergraduates)	Studies on the recovery from brain injury.
	Ulrich Hollstein, Ph.D. (one undergraduate)	Actinomycin analogs with long-chain-modified D-valine.
	William M. Litchman, Ph.D. John L. Trujillo, Ph.D. (one graduate; two undergraduates)	C-13 and P-31 NMR studies of phospho-fructo-kinase and FDPase in liver.
	Leroy C. McLaren, Ph.D. Arthur D. Bankhurst, M.D. (one graduate; one undergraduate)	Prostaglandin synthesis in viral infected cells.
	E. P. Papadopoulos, Ph.D. (one undergraduate)	Synthesis of biologically useful heterocyclic compounds.
	Su-Moon Park, Ph.D. (one undergraduate)	Interactions of polycyclic aromatic hydrocarbons with DNA or its bases.
	M. L. Reidesel, Ph.D. (one undergraduate)	Respiration during hibernation and hypothermia.
	Linda C. Saland, Ph.D. (one undergraduate)	Ultrastructure and control of endorphin cells.
	Kathryn G. Vogel, Ph.D. (one undergraduate)	Proteoglycans of the aging cell.
	Robert B. Loftfield (two graduates)	Mechanism of synthesis of aminoacyl-tRNA.
		Major Equipment:
		Beckman kinetic system with a UV accessory.
		Nicoli Quasi elastic laser.
		LS-1006 Beckman liquid scintillation counter.
		PROPHET: an interactive, graphics-based computer system for biomedical research.

Bronx Community College

Program Director

Carl J. Polowczyk, Ph.D.
Dean of Academic Affairs
Professor of Chemistry
Bronx Community College
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University Avenue
Bronx, New York 10453
(213) 367-7300 x404/405

Project Investigators Number of Student Participants

Richard F. Heller, Ph.D.
(three undergraduates)

Rudean Leinaeng, M.S.
Eugene Passer, Ph.D.
(four undergraduates)

Ronald F. Thomas, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

A study of ichthyoneoplasia in the lower Hudson River.

Determination of animal and environmental lead levels at the Bronx Zoo; investigation of comparative biochemistry of heme synthesis.

Behavioral neuropharmacology of brain monoamines.

Major Equipment:

City University of New York research vessel, the "Atlantic Twin."

Perkin-Elmer 703 absorption spectrophotometer.

Perkin-Elmer HGA-400 graphite furnace.

Perkin-Elmer 650-40 spectrofluorometer.

Stereotactic apparatus.

Behavioral testing equipment.

City College of the City University of New York

Program Director

Myer M. Fishman, Ph.D.
Professor of Chemistry
City College of the City University of New York
138th Street at Convent Avenue
New York, New York 10031
(212) 690-8324/8402

Project Investigators Number of Student Participants

Myer M. Fishman, Ph.D.
(three undergraduates)

Thomas Haines, Ph.D.
(one graduate; one undergraduate)

John Lee, Ph.D.
(one graduate; two undergraduates)

John Lombardi, Ph.D.
(one graduate; one undergraduate)

Robert Rockwell, Ph.D.
(two undergraduates)

Charlotte Russell, Ph.D.
(two undergraduates)

Horst Schulz, Ph.D.
(one graduate; one undergraduate)

Donald Sloan, Ph.D.
(two graduates; one undergraduate)

Solomon Steiner, Ph.D.
(one graduate; one undergraduate)

Sharon Cosloy, Ph.D.
(one graduate; two undergraduates)

Arthur Woodward, Ph.D.
(one undergraduate)

Joshua Wallman, Ph.D.
(one undergraduate)

Research Projects/ Major Equipment

Projects:

Studies of the interaction of divalent cations with daunomycin and DNA.

Membrane composition in *Ochromonas danica;* lipid determination of the flagellar membrane of *Chlamydomonas reinhardtii.*

Algal symbiosis in larger *Foraminifera;* nutritional studies on copepods.

Kinetics of electrochemical reaction, using surface-enhanced Raman spectroscopy; Raman spectroscopy of molecules adsorbed on sols.

Photobehavior and light-dependent mating in natural populations of *Drosophila buskii.*

Binding specificities and affinity purification of *Nereis* lectins.

Inhibition studies of rat heart thiolases; regulation of thiolases from pig heart; control of fatty acid oxidation in the heart.

Isolation of ribokinase from *S. typhimurium;* phosphoribosyl transfer reaction in yeast; studies of phosphoribosyl transferase in yeast.

Naloxone-induced, site-specific effects on self-stimulation in the rat; an analysis of optical isolation.

Molecular recombination using *E. coli* K-12.

Poly(trans-1,4-isoprene) crystals.

Developmental plasticity in chick visual systems.

Major Equipment:

Mass spectrometer, including an AEI-902S double-focusing instrument.

JEOL JES-ME-3K electron spin resonance spectrometer.

Spex Ramalog model 3 laser-Raman spectrometer.

Nester-Faust 850 preparative gas chromatograph.

Analytical and preparative ultracentrifuges.

Scintillation counters.

High-pressure liquid chromatograph.

Amino acid analyzer.

DEC PDP-10 computer and several satellite PDP-8 computers.

Hunter College

Program Director

Richard C. Mawe, Ph.D.
Dean of Sciences and Mathematics
Hunter College
695 Park Avenue
New York, New York 10021
(212) 570-5374

Project Investigators Number of Student Participants

David L. Beveridge, Ph.D.
(one graduate; one undergraduate)

Richard L. Chappell, Ph.D.
(two undergraduates)

William D. Cohen, Ph.D.
(one graduate; one undergraduate)

Max Diem, Ph.D.
(one undergraduate)

John Fray, Ph.D.
(two undergraduates)

Audrey E. V. Haschemeyer, Ph.D.
(two undergraduates)

Joseph S. Krakow, Ph.D.
(one graduate)

David K. Lavallée, Ph.D.
(two undergraduates)

Robert L. Lichter, Ph.D.
(two undergraduates)

Peter N. Lipke, Ph.D.
(one graduate; one undergraduate)

Robert Marino, Ph.D.
(one undergraduate)

Harvey L. Ozer, M.D.
(one graduate; one undergraduate)

Rivka Rudner, Ph.D.
(two undergraduates)

William V. Sweeney, Ph.D.
(two undergraduates)

Maria Tomasz, Ph.D.
(one graduate; one undergraduate)

James H. Wyche, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Solvent effects on biomolecular structure and process.

Elucidation of retinal neural interactions in the dragonfly as a model system.

Role of the marginal-band system in the genesis and maintenance of the flattened, elliptical morphology of nucleated erythrocytes.

Conformational studies of peptides via Raman optical activity.

Control of renin secretion.

Control of protein synthesis in temperature adaptation in marine organisms.

Studies on the cyclic AMP receptor protein of *E. coli;* RNA synthesis by bacterial RNA polymerase.

Rate- and site-selective alkylating reagents.

NMR characterization of natural abundance nitrogen-15 chemical shifts of alkaloids, antibiotics, and related model compounds.

Role of carbohydrates in cellular adhesion in yeast.

Hydrogen bonding and charge transfer: a nuclear quadripole resonance study.

Regulation of growth of mammalian cells in culture.

Macromolecular aspects of synchronous cell division.

Origin of reduction potential in iron-sulfur proteins.

Reduction products of metronidazole.

Role of insulin in the regulation of pituitary functions.

Major Equipment:

Mass spectrometer.

Nuclear magnetic resonance spectrometer.

Electron spin resonance spectrometer.

Raman spectrophotometer.

RCA electron microscope 3H.

PROPHET: an interactive, graphics-based computer system for biomedical research.

Medgar Evers College

Program Director

Edward J. Catapano, Ph.D.
Associate Professor of Biology
Division of Natural Sciences
Medgar Evers College
City University of New York
1150 Carroll Street
Brooklyn, New York 11225
(212) 735-1913

Project Investigators Number of Student Participants

Hiroko I. Karan, Ph.D.
(two undergraduates)

Arthur S. Lewis, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Isolation and photochemical reactions of rhodopsin in an artificial membrane.

In vitro studies of the regulatory effects of folic acid.

Major Equipment:

Liquid scintillation counter.

Gradient high-pressure liquid chromatograph.

Spectrofluorometer.

Ultracentrifuge.

Nuclear magnetic resonance, infrared, UV-visible, and atomic absorption spectrophotometers.

Fluorescence microscope with microspectrofluorometer.

State University of New York/College at Old Westbury

Program Director

Robert M. Hoyte, Ph.D.
Associate Professor of Chemistry
State University of New York/College at Old Westbury
Box 210
Old Westbury, New York 11568
(516) 876-3041/3046

Project Investigators Number of Student Participants

Robert M. Hoyte, Ph.D.
(two undergraduates)

Rita Colon-Urban, Ph.D.
(two undergraduates)

Michael Leung, Ph.D.
(two undergraduates)

Samuel von Winbush, Ph.D.
(two undergraduates)

Judith Weinstein-Lloyd, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Synthesis and purification of biologically important steroid analogs.

Determination of biologically active substances from bryozoans.

Processing and secretion of procollagen in chick embryo tendon cultures.

Polymeric mixed-oxidation-state metallic complexes as an electron-transfer pathway.

Elucidation of the behavior of the solvated electron in liquids.

Major Equipment:

High-pressure liquid chromatograph.

Liquid scintillation counter.

Ultracentrifuge and rotor.

NMR, infrared, and UV-visible spectrophotometers and accessories.

York College of the City University of New York

Program Director

Deirdre A. Cohn, Ph.D.
Associate Professor of Biology
Division of Natural Sciences
York College of the City University of New York
Jamaica, New York 11451
(212) 969-4376/4404

Project Investigators Number of Student Participants

Deirdre A. Cohn, Ph.D.
(three undergraduates)

Leslie Lewis, Ph.D.
Koibong Li, Ph.D.
(three undergraduates)

Peter Scheiner, Ph.D.
(three undergraduates)

Paul Young, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Androgen sensitivity as a factor in immunocompetence.

Gentamicin-induced microbial cell transformation.

Synthesis and properties of azaazulenes.

NMR studies of selected peptides.

Major Equipment:

Amino acid analyzer.

Liquid scintillation counter.

Refrigerated, micro- and ultracentrifuges.

Automatic spectrophotometers.

Sonifer cell disruptor and speedvac concentrator.

NMR, infrared, and UV-visible spectrometers.

Temperature-programmable gas chromatograph.

Johnson C. Smith University

Program Director

Roselyn V. Little, Ph.D.
Associate Professor
Biology Department
Johnson C. Smith University
100 Beatties Ford Road
Charlotte, North Carolina 28216
(704) 378-1000 x2047

Project Investigators Number of Student Participants

Roselyn V. Little, Ph.D.
(two undergraduates)

B. K. Chopra, Ph.D.
Hampton Wright, Ph.D.
(two undergraduates)

Huey Rowe-Anderson, Ph.D.
(two undergraduates)

Henry F. Russell, Ph.D.
(two undergraduates)

Ruth L. Greene, Ed.D.
James R. Law, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Effect of anti-beta-2 microglobulin on the translational properties of peripheral blood lymphocytes.

Susceptibility analysis of bacteria to cefoxitin, cefamandole, and cephatholin.

Synthesis of opiate-like analgesic compounds.

Synthesis of melatonin analogs: potential cell mitosis inhibitors.

Differential coping strategies: focus on behavioral patterns of the black elderly.

Major Equipment:

Nuclear magnetic resonance spectrophotometer R24B.

Waters liquid chromatograph 6000A.

Ultracentrifuge.

Spectrofluorometer.

North Carolina A & T State University

Program Director

Richard Bennett, Jr., Ph.D.
Professor of Chemistry
North Carolina A & T State University
312 North Dudley Street
Greensboro, North Carolina 27411
(919) 379-7565

Project Investigators Number of Student Participants

Richard Bennett, Jr., Ph.D.
(three undergraduates)

Alex N. Williamson, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Study of the chemical and biochemical composition of mucus.

Synthesis, characterization, electrochemical and EPR studies of hemocyanin models.

Major Equipment:

Varian FT80 MHz and 60 MHz NMR spectrometers.

Finnigan gas chromatograph-mass spectrometer.

Varian electron spin resonance spectrometer.

Beckman DB, DU, 25, 26, B and L 2000 UV-visible spectrophotometers.

Perkin-Elmer 257 and 727, and Beckman 5A infrared spectrometers.

Hewlett-Packard 5700 and 5730, Tracor, and Bendix 2500 gas chromatographs.

Beckman J21 and L5-65 centrifuges.

Beckman L5-100 scintillation counter.

Beckman amino acid analyzer.

Varian atomic absorption spectrometer.

Perkin-Elmer MPF-3 fluorescence spectrometer.

North Carolina Central University

Program Director

Walter H. Pattillo, Jr., Ph.D.
Undergraduate Dean and Professor of Biology
North Carolina Central University
Durham, North Carolina 27707
(919) 683-6237

Project Investigators Number of Student Participants

Howard Duncan, Ph.D.
(one graduate; two undergraduates)

John A. Myers, Ph.D.
Robert A. Izydore, Ph.D.
(three graduates; three undergraduates)

John Ruffin, Ph.D.
James Schooler, Ph.D.
(one graduate; two undergraduates)

Ezra L. Totton, Ph.D.
(two graduates; one undergraduate)

Research Projects/ Major Equipment

Projects:

Simultaneous *Trichinella spiralis* and *Trypanosoma congolense* infections in mice.

Synthesis of pharmacologically active compounds from *cis*-diacyl-diimides and oxazolium-5 oxides.

Airborne carcinogens and their affinity for airborne pollen and fungal spores.

Synthesis of compounds with potential biomedical importance.

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North Carolina Central University—Continued

Major Equipment:

Varian 60 MHz nuclear magnetic resonance spectrometer EM360-A.

Beckman IR-10 and IR-18 spectrophotometers.

Varian 3760 gas chromatograph with recorder.

Hewlett-Packard 402 and Beckman GC-5 gas chromatographs.

Sargent electrolytic analyzer.

High-performance liquid chromatographs: Waters preparatory L/C system 500A and Waters analytical L/C model 244.

Beckman DU and DB ultraviolet spectrophotometers.

Scanning electron microscope.

Hewlett-Packard liquid scintillation system.

Complete tissue culture facilities.

CO_2 laser-molectron IR250 for submillimater wavelength laser research (second CO_2 laser under construction).

Perkin-Elmer FIR spectrophotometer 301 and dual-channel optical data acquisition system (General Dynamics' Rose system).

Nuclear counting and gamma-ray spectroscopy system: Nuclear Data multichannel analyzer 2200 with 1K word memory; Digital Equipment Corporation PDP8/M computer with 4K word (12 bit) memory dedicated to a 3" x 3" NaI and Tl detector, Harshaw 302/4, Monsanto M-266 neutron source ^{239}Pu-Be with emission rate of 9.14×10^6 neutrons/second.

Computer facilities: Tektronix terminal 4051, stand-alone microprocessor RS-232, interfaced with Triangle Universities Computation Center (TUCC) IBM 370, HP 2000, etc., Tektronix 4631 hard-copy unit with Terak 8510-A system, 48K word (16 bit) microprocessor, DEC LS1-11, floppydisk, 12" CRT, RS-232 interfaced with TUCC. Four separate units.

Winston-Salem State University

Program Director

Wilveria B. Atkinson, Ph.D.
Professor of Biology
Winston-Salem State University
Winston-Salem, North Carolina 27102
(919) 761-2122

Project Investigators Number of Student Participants

Wilveria B. Atkinson, Ph.D.
(two undergraduates)

Nathaniel E. Hewitt, Jr., Ph.D.
(two undergraduates)

Kim H. Tan, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Identification of surface antigens of type II (lung) epithelial cells.

Aging and the regulation of enzyme activity.

Biosynthesis and secretion of extracellular carbohydrases from strains of *Aspergillus niger.*

Major Equipment:

Siemen transmission electron microscope and accessories.

Beckman 7500 beta scintillation counter.

Hitachi 100-60 spectrophotometer and recorder.

Varian nuclear magnetic resonance spectrometer EM300X.

Zeiss dark-field and immunofluorescence microscope.

High-pressure liquid chromatograph.

Central State University

Program Director

Melvin A. Johnson, Jr., Ph.D.
Chairman
Department of Biology
Central State University
Wilberforce, Ohio 45384
(513) 376-6356

Project Investigators Number of Student Participants

Melvin A. Johnson, Jr., Ph.D.
(four undergraduates)

Willie J. Washington, Ph.D.
Raman C. Murthy, Ph.D.
(two undergraduates)

Raman C. Murthy, Ph.D.
Willie J. Washington, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Stress response in dogs with altered splenic tissue.

Mutagenic and teratological potential of laboratory solvents.

Pulmonary response to metals.

Major Equipment:

Quinton three-phase treadmill.

Coulter counter.

RCA electron microscope.

Ultracentrifuge.

Hitachi digital spectrophotometer.

Zeiss spectrophotomicroscope.

Northeastern Oklahoma State University

Program Director

Gary VanDenbos, Ph.D.
Associate Professor of Chemistry
Northeastern State University
Tahlequah, Oklahoma 74464
(918) 456-5511 x488

Project Investigators Number of Student Participants

Gary VanDenbos, Ph.D.
(four undergraduates)

Lanny Reed, Ph.D.
(five undergraduates)

Donna Smith, Ph.D.
(four undergraduates)

Gary Wickham, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Regulation of cell replication by thyroid hormone.

Applications of microprocessor and/or minicomputer controls and on-line acquisition and reduction for biomedical instrumentation.

Synthesis of amino acid conjugates of indoleacetic acid by cultured crown gall tumors.

Functional morphology of the anterior chamber angle of the mammalian eye.

Major Equipment:

Preparative ultracentrifuge.

High-performance liquid chromatography instrumentation.

Liquid scintillation counter.

Southeastern Oklahoma State University

Program Director

Jack L. Robinson, Ph.D.
Professor of Chemistry
Southeastern Oklahoma State University
Durant, Oklahoma 74701
(405) 924-0121 x320

Project Investigators Number of Student Participants

Gordon L. Eggleton, Ph.D.
(three undergraduates)

Jack L. Robinson, Ph.D.
(four undergraduates)

John R. Wright, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Studies of mixed-valence copper-cluster compounds.

Development of liquid chromatographic methods for the separation and analysis of compounds of current interest in environmental and biomedical sciences: analysis of polycyclic aromatic hydrocarbons in cigarette smoke condensate and white mineral oil; analysis of oxalic acid in urine and body fluids.

Lysosomes and progressive muscular dystrophy: biological NMR of membranes; penicillamine/copper interactions; investigation of deeply pigmented heavy metal antibodies.

Major Equipment:

On-line microcomputer/EM360 nuclear magnetic resonance spectrometer.

Nuclear magnetic resonance facility that includes Fourier transform (correlation) capability.

Liquid scintillation spectrometer.

Gradient-elution, high-performance liquid chromatograph.

Catholic University of Puerto Rico

Program Director

Gabriel A. Infante, Ph.D.
Professor of Chemistry
Catholic University of Puerto Rico
Las Americas Avenue
Postal Station #6
Ponce, Puerto Rico 00732
(809) 844-4150 x335

Project Investigators Number of Student Participants

Gabriel A. Infante, Ph.D.
(two undergraduates)

Richard Eckert, Ph.D.
(11 undergraduates)

Carmen Mercado, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Radiosensitization and radiation chemical studies on biologically important compounds.

Atmospheric particulates as a public health hazard.

Elucidation of the mechanism of action of the nitrofurans.

Inter-American University

Program Director

Anne D. Frame, M.S.
Professor of Biology
Department of Natural Sciences
Inter-American University
Metropolitan Campus
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Hato Rey, Puerto Rico 00919
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Project Investigators Number of Student Participants

Anne D. Frame, M.S.
Pedro Bendezu, D.V.M.
Grant W. Sigsworth, Ph.D.
(four undergraduates)

Arnaldo Alzerreca, Ph.D.
Faris Yany, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Study of the epidemiology and control of *Fasciola hepatica* in Puerto Rico: prevalence in cattle on the farms; the various biological aspects that contribute to the survival and development of *Lymnaea cubensis*, the snail intermediate host of *Fasciola hepatica;* cryptobiosis; the prevalence of *Fasciola hepatica* in the human population in Puerto Rico; and the correlation between environmental factors and the degree of *Fasciola hepatica* infection in dairy cows in Puerto Rico.

Chemical control of the intermediate snail host of *Fasciola hepatica* by means of natural products.

Major Equipment:

UV-visible spectrophotometer.

High-pressure liquid chromatograph.

University of Puerto Rico, Mayaguez

Program Director

George W. Miskimen, Ph.D.
Professor of Biology
University of Puerto Rico
Mayaguez Campus
Mayaguez, Puerto Rico
00708
(809) 832-4040 x3166

Project Investigators Number of Student Participants

George W. Miskimen, Ph.D.
Carmen R. Miskimen, Ph.D.
Jaime Arbona-Fazzi, Ph.D.
(two graduates; two undergraduates)

Carlos J. Castillo, Ph.D.
(two graduates; one undergraduate)

Thomas R. Tosteston, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Electrophysiology of insects (sugar cane borer).

Protein electrophoresis: human plasma proteins.

Pharmacological activity of marine microbial exudates.

Major Equipment:

Transmission and scanning electron microscopes.

Laser-Raman spectrometer.

Mass spectrometer.

Electrophysiology monitoring and recording equipment (intra- and extracellular).

UV-visible and infrared spectrophotometers.

University of Puerto Rico, Rio Piedras

Program Director

George V. Hillyer, Ph.D.
Program Director, SUBE
P.O. Box AR-UPR Station
University of Puerto Rico
Rio Piedras Campus
Faculty of Natural Sciences
Rio Piedras, Puerto Rico
00931
(809) 764-0000, x2596/3546

Project Investigators Number of Student Participants

George V. Hillyer, Ph.D.
(two graduates; two undergraduates)

J. R. Ortiz, Ph.D.
(two graduates; two undergraduates)

L. Echegcyen, Ph.D.
(two graduates; two undergraduates)

Gerald Larson, Ph.D.
(four graduates; four undergraduates)

James Muir, Ph.D.
Mariel Muir, Ph.D.
(two graduates; two undergraduates)

Alberto H. Sillau, Ph.D.
(two graduates; two undergraduates)

Nilda M. Keene, Ph.D.
(three undergraduates)

Eduardo A. Santiago-Delpin, M.D.
(one graduate; one undergraduate)

Manuel Martinez Maldonado, M.D.
Jose Cangiano, M.D.
(two graduates; four undergraduates)

James J. Keene, Ph.D.
(two graduates; three undergraduates)

Gladys E. deMotta, Ph.D.
(three graduates; two undergraduates)

Edwin W. Billmire, Ph.D.
(two graduates; one undergraduate)

Angel Roman-Franco, M.D.
(one graduate; two undergraduates)

Adriana Baez, Ph.D.
(two undergraduates)

Fernando Renaud, Ph.D.
(two graduates; three undergraduates)

Reginald Morales, Ph.D.
(two graduates; two undergraduates)

Nuri Rodriguez del Valle, Ph.D.
(one graduate; two undergraduates)

Duane Gubler, Ph.D.
Robert Novak, Ph.D.
(one graduate; one undergraduate)

Carlos H. Ramirez Ronda, Ph.D.
(two undergraduates)

Terry C. Hazen, Ph.D.
(two graduates; two undergraduates)

H. Dupont Durst, Ph.D.
(two graduates; three undergraduates)

Research Projects/ Major Equipment

Projects:

Immunologic studies in schistosomiasis and fascioliasis.

Morphological and biochemical aspects of cell differentiation during lens regeneration.

Electron transfer studies of pyrimidine bases.

Regional and stereospecific entries into biologically active molecules via the hydroboration of silyl enol ethers.

Study of potential antitumor transition metal complexes: effects on stereochemistry.

Muscle capillarity and fiber types in thyrotoxicosis.

Drug effects on affect- and arousal-coding neurons.

Immune function of hyperlipidemic patients.

Renin, aldosterone, and renal Na + K + ATPase in genetic hypertension in rats.

Integration of pain and reward mechanisms at the single-neuron level in the forebrain.

Studies on the frog neuromuscular junction.

Membrane synthesis in enterotoxigenic *E. coli*.

Mechanism of action of carcinogenic fibers.

Inhibitory activity and mechanism of action of the alkaloids in genus *Zanthoxylum*.

Role of serotonin in cell differentiation.

Effects of erythrocyte alterations on phospholipase A_2 interaction.

Effects of cyclic nucleotides and calcium ions on the control of dimorphism in the pathogenic fungus *Sporothrix schenckii*.

Dengue fever diagnosis and control.

Bacterial adherence in pathogenesis of infective endocarditis.

Effect of tropical water quality on pathogenic bacteria.

Marine natural product chemistry.

Benedict College

Program Director

Mary F. Finlay, Ph.D.
Professor of Biology
Benedict College
Harden and Blanding Streets
Columbia, South Carolina
29204
(803) 254-4220 x2278

Project Investigators Number of Student Participants

Juanita Scott, Ed.D.
(three undergraduates)

Mary F. Finlay, Ph.D.
(three undergraduates)

James Kinard, Ph.D.
(three undergraduates)

Ingun Hahn, Ph.D.
(three undergraduates)

Ying-Sing Li, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Effects of metal pollutants on embryonic development, regeneration, and transplantation in *Rana pipiens*.

Effects of metals on reproduction and fetal health in the rodent *Peromyscus*.

Effects of trace heavy metals on the cardiovascular system.

Neutron activation analysis of air pollutants.

Vibrational spectra of inhalational anesthetic compounds.

Major Equipment:

Electron microscope.

South Carolina State College

Program Director

Nirmalendu Datta-Gupta, Ph.D.
Professor of Chemistry
South Carolina State College
Box 1731
Orangeburg, South Carolina
20117
(803) 536-7157

Project Investigators Number of Student Participants

Nirmalendu Datta-Gupta, Ph.D.
(six undergraduates)

Roy Isabel, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Synthetic porphyrins with potential antitumor properties.

Axial ligand binding studies of ferrous porphyrins; activation of coordinated gaseous ligands.

Major Equipment:

Raman spectrophotometer.

T-Jump/Stopped flow apparatus.

Carey 180 UV-visible spectrometer.

Voorhees College

Program Director

Malkiat S. Guram, Ph.D.
Professor of Biology
Voorhees College
Denmark, South Carolina
29042
(803) 793-3351 x7207

Project Investigators Number of Student Participants

Surjan S. Rawalay, Ph.D.
(two undergraduates)

Malkiat S. Guram, Ph.D.
(six undergraduates)

Research Projects/ Major Equipment

Projects:

Synthesis of unusual benzamides.

Teratogenicity of psychotropic drugs.

Fisk University

Program Director

George Hull, Ph.D.
Director
Division of Natural Sciences
and Mathematics
Fisk University
Nashville, Tennessee 37203
(615) 329-8606

Project Investigators Number of Student Participants

I. W. Elliott, Ph.D.
(three graduates; three undergraduates)

Research Projects/ Major Equipment

Projects:

New synthetic approaches to isoquinoline alkaloids of potential medicinal value.

Major Equipment:

Raman spectrophotometer.

RCA electron microscope, EMU3.

LeMoyne-Owen College

Program Director

Kothapa N. Chetty, Ph.D.
Associate Professor of Biology
LeMoyne-Owen College
807 Walker Avenue
Memphis, Tennessee 38126
(901) 774-9090 x330

Project Investigators Number of Student Participants

Kothapa N. Chetty, Ph.D.
Siraj Ahmad, Ph.D.
M. Itisham Alam, Ph.D.
Sellestine Henry
(five undergraduates)

Kenneth A. Devor, Ph.D.
(two undergraduates)

Research Projects/ Major Equipment

Projects:

Interaction of beryllium with magnesium, iron, cobalt, calcium, phosphorus, and other trace minerals in the rat and chick.

Effect of phenyl alcohol and levorphanol on energy metabolism in *E. coli*.

Major Equipment:

Perkin-Elmer atomic absorption spectrophotometer.

Gilford 2600 and Pye-Unicam 550 spectrophotometers.

RCA electron microscope EMU-3.

Beckman L7000 scintillation counter.

Meharry Medical College

Program Director

Fred Jones, Ph.D.
Associate Professor
Department of Microbiology
Meharry Medical College
10005 Eighteenth Avenue, North
Nashville, Tennessee 37208
(615) 327-6212

Project Investigators Number of Student Participants

Winfred D. Magee, Ph.D.
Clem Russ, Ph.D.
(one graduate)

Fred Jones, Ph.D.
Thomas E. Shockley, Ph.D.
(two graduates)

Joel M. Blatt, Ph.D.
(one graduate)

John S. Thomas, Ph.D.
(one graduate)

Peter J. Dolce, Ph.D.
(10 to 15 undergraduates)

Parimal Adhikary, Ph.D.
Walter Udoji, M.D.
Mack T. Scott, D.V.M.
(one graduate)

Stanley L. Evans, Ph.D.
Priscilla S. Evans, Ph.D.
(one graduate)

Joseph V. Auditore, Ph.D.
(one graduate)

Salil K. Das, Ph.D.
(two graduates)

Abdallah M. Isa, Ph.D.
(one graduate)

Charles D. Proctor, Ph.D.
(one graduate)

Joel S. Trupin, Ph.D.
(one graduate)

William L. Stone, Ph.D.
(one graduate)

Delores Shockley, Ph.D.
(two graduates)

Mark E. Levitch, Ph.D.
(one graduate)

Research Projects/ Major Equipment

Projects:

Hemodynamic changes and extracellular fluid volume in young normotensive and spontaneously hypertensive rats.

Nutritionally deficient *Neisseria gonorrhoeae* and virulence.

Convergent mechanisms that control branched-chain amino acid biosynthesis.

Modification of perturbation-evoked EMG activity by changes in task set.

Research in biomedical sciences (RIBS) summer institute.

Study of bioactivities of some iron-chelating agents.

Isocoumarin derivatives and some related compounds: effect on blood coagulation.

Toxicology and effect of adenine on regenerating liver.

Development of acyl-CoA:*sn* glycerol-3-phosphate acyltransferase in fetal guinea pig lung.

Immunosuppressive factors: characterization and mode of action.

Effect of age on adrenergic influence modulation of opiate/opioid addiction development.

Regulation of collagen synthesis in keloid and normal fibroblasts.

Serum lipoproteins and dietary antioxidants.

Antihypertensives; opiate abstinence and brain extracts.

Study of the microbial conversion of choline to dimethylamine by intestinal microorganisms.

Major Equipment:

Liquid scintillation counters.

Physiographs with accessories for blood pressure, EKG, respiration, muscle tension, heart sounds, and drop counters.

Metro-Med respirator.

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Meharry Medical College—Continued

		Campbell animagraph (X-ray/fluoroscope). Models L5-50 and L5-75 ultracentrifuges. Amino acid analyzer. Spectrophotofluorometers. Gas chromatograph. Philips EM 301 transmission electron microscope. Zeiss EM 9S2 transmission electron microscope. JEOL JSM 35 scanning electron microscope. Computer center.

Meharry Medical College School of Medicine

Program Director	Project Investigators Number of Student Participants	Research Projects/ Major Equipment
Robert E. Hardy, M.D. Acting Chairman Department of Internal Medicine Meharry Medical College School of Medicine 10005 Eighteenth Avenue, North Nashville, Tennessee 37208 (615) 327-6268	Joseph M. Stinson, M.D. Clinton Cummings, M.D. Rengachari Raghunathan, Ph.D. Robert E. Hardy, M.D. Chandradhar Dwivedi, Ph.D. Robert L. Lownes, M.D.	**Projects:** Pulmonary function standards in black Americans. Gastroesophageal reflux as a cause of intrinsic asthma in adults. Further studies on lysozyme and polyamine alterations in neoplastic disease as markers of neoplasia. Estrogen receptors: response to chemotherapy in black breast cancer patients. Further investigation of plasma sialic acid and sialytransferase alterations in neoplastic disease. Study of factors related to crisis episodes in sickle cell patients. **Major Equipment:** Hemoscan. Blood-gas analyzer. Honeywell six-channel recorder. Volumetric processor with spirometer. Computerized pulmonary function laboratory. Total body plethysmograph. Ultracentrifuge. Beckman scintillation counter.

Tennessee State University

Program Director

Edward L. Risby, Ph.D.
Professor and Head
Department of Biological Sciences
Tennessee State University
3500 Centennial Boulevard
Nashville, Tennessee 37203
(615) 320-3462

Project Investigators Number of Student Participants

Edward L. Risby, Ph.D.
(two graduates; one undergraduate)

James A. Adams, Ph.D.
(two graduates; one undergraduate)

Helen R. Barrett, Ph.D.
(three graduates; one undergraduate)

Ying-Ming Lin, Ph.D.
(two graduates; one undergraduate)

Research Projects/ Major Equipment

Projects:

Biochemical properties and drug susceptibility of trypanosomal enzymes.

Effects of PCB's on growth and morphogenesis in *Hydra*.

Biofeedback control as a function of subject and task variables.

Regulation of cyclic 3',5'-nucleotide phosphodiesterase.

Major Equipment:

Philips 201 electron microscope.

Beckman scintillation counter.

Beckman preparative centrifuge.

Gilford spectrophotometer 260.

Bishop College

Program Director

Edison R. Fowlks, Ph.D.
Professor
Department of Life Sciences
Bishop College
3837 Simpson-Stuart Road
Dallas, Texas 75241
(214) 372-8127

Project Investigators Number of Student Participants

Edison R. Fowlks, Ph.D.
Yuan Fon Lee, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Molecular structure and function of multiple-component viral ribonucleic acid.

Major Equipment:

Facility for RNA and DNA analysis.

Ultramodern facilities for viral studies.

Incarnate Word College

Program Director

Mary D. Healy, Ph.D.
Professor of Chemistry
Incarnate Word College
4301 Broadway
San Antonio, Texas 78209
(512) 828-1261 x231

Participating Institutions:

Our Lady of the Lake University (OLLU)
411 Southwest 24th Street
San Antonio, Texas 78285
(512) 434-6711

St. Mary's University (STMU)
One Camino Santa Maria
San Antonio, Texas 78284
(512) 436-3011

Audie Murphy Veterans Administration Hospital (AMVAH)
7400 Merton Minter Blvd.
San Antonio, Texas 78284

Brooks School of Aerospace Medicine (BSAM)
Brooks Air Force Base, Texas 78235

Incarnate Word College (IWC)
4301 Broadway
San Antonio, Texas 78209
(512) 828-1261

University of Texas Health Science Center at San Antonio (UTHSCSA)
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San Antonio, Texas 78284
(512) 691-6011

University of Texas at San Antonio (UTSA)
6900 West Loop 1604
San Antonio, Texas 78285
(512) 691-4011

Southwest Foundation for Research and Education (SWFRE)
8848 West Commerce
San Antonio, Texas 78284
(512) 674-1410

Project Investigators Number of Student Participants

Mary D. Healy, Ph.D. (IWC)
(six undergraduates)

Andrzej Bartke, Ph.D. (UTHSCSA)
(one undergraduate)

Frederick Bartter, Ph.D. (AMVAH)
(one undergraduate)

Kenneth Blum, Ph.D. (UTHSCSA)
(one undergraduate)

V. Daniel Castracane, Ph.D. (SWFRE)
(one undergraduate)

Catalina Fresquez, Ph.D. (IWC)
(one graduate; two undergraduates)

Nathan Greene, Ph.D. (SWFRE)
(one undergraduate)

Martin L. Meltz, Ph.D. (UTHSCSA)
(one undergraduate)

Arvind T. Modak, Ph.D. (UTHSCSA)
(one undergraduate)

Barry Norling, Ph.D. (UTHSCSA)
(one undergraduate)

P. N. Rao, Ph.D. (SWFRE)
(one undergraduate)

David Ross, Ph.D. (UTHSCSA)
(one undergraduate)

Ciro Sumaya, M.D. (UTHSCSA)
(one undergraduate)

William B. Stavinoha, Ph.D. (UTHSCSA)
(one undergraduate)

John A. Ward, Ph.D. (IWC)
(one graduate; two undergraduates)

Eleanor A. Young, Ph.D. (UTHSCSA)
(one undergraduate)

Research Projects/ Major Equipment

Projects:

In vitro studies of magnesium metabolism in the cardiovascular system.

Pituitary regulation of testicular function.

Relationship of urinary prostaglandin E_2 to urine volume.

Central actions of ethanol: possible involvement of peptidal opiates.

Prostaglandin and decidual tissue.

DNA and RNA and protein synthesis in polytene chromosomes.

Autoimmune effects of environmental agents.

Establishment of a Ewing's sarcoma multicellular steroid model for combined chemotherapy-radiotherapy studies.

Nicotine and the central catecholaminergic system.

Evaluation of methods for determining useful lifetime of dental duplicating hydrocolloid used in removable partial denture construction.

Synthesis of new steroid haptens for radioimmunoassay.

Effects of opiates on cerebral calcium metabolism.

Campylobacter gastroenteritis in children.

Nicotine and the central catecholaminergic system.

In vivo studies of magnesium metabolism in the cardiovascular system.

Gastrointestinal response to liquid formula diets.

Major Equipment:

20 kW microwave enzyme inactivation instrument.

Finnigan gas chromatograph-mass spectrometer computer.

Varian aerograph 1860 gas chromatograph with recorder.

(Continued on next page)

Incarnate Word College—Continued

		Two Varian aerograph 1400 gas chromatographs with recorders. Perkin-Elmer MPF2A fluorescence spectrophotometer. Nuclear-Chicago scintillation counters. Beckman DB-G grating spectrophotometer. Gras 7 polygraph. UV-visible mass spectrometer with automatic camera. Laser microirradiation unit and CO_2 laser unit.

Pan American University

Program Director	Project Investigators Number of Student Participants	Research Projects/ Major Equipment
Norman Savage, Ph.D. Professor Department of Biology Pan American University Edinburg, Texas 78539 (512) 381-3546	James W. Aldridge, Ph.D. (four undergraduates) Gary Montgomery, Ph.D. (three undergraduates) Roy Cain, Ph.D. (one graduate; two undergraduates) Jose Castrillon, Ph.D. (three undergraduates) Andres Estrada, M.S. (three undergraduates) Norman Savage, Ph.D. (one graduate; two undergraduates)	**Projects:** Phonetic storage in speech perception. Psychophysiological correlates of psychosomatic illness. Use of biofeedback training to modify psychophysiological response patterns in stress-related disorders. Tilorone analogs. Studies on the mechanism of the bathochromic shift and wavelength regulation in visual pigments. *Streptobacillus moniliformis*-induced arthritis in rodents. **Major Equipment:** Perkin-Elmer NMR spectrophotometer. Hewlett Packard dual column gas chromatograph. Psychophysiology and biofeedback equipment. Psychoacoustic, visual perception, and human performance computer-based laboratory.

Prairie View A & M University

Program Director

Jewel E. Berry, Ph.D.
Professor of Biology
Prairie View A & M University
Prairie View, Texas 77445
(713) 857-3911/3912

Project Investigators Number of Student Participants

V. M. Doctor, Ph.D.
(two graduates; two undergraduates)

Arthur C. Washington, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Action of polysaccharides on the coagulation of human plasma.

Study of two enzymes essential to development in *Dictyostelium discoideum.*

Major Equipment:

Beckman J-21 preparative centrifuge.

Gilson microfractionator.

New Brunswick MF-214 microfermenter.

Texas A & I University

Program Director

John C. Perez, Ph.D.
Professor of Biology
Texas A & I University
Kingsville, Texas 78363
(512) 595-3803

Project Investigators Number of Student Participants

John C. Perez, Ph.D.
Vivian Garcia, Ph.D.
(two graduates; three undergraduates)

Shin-Ichi Tokuno, Ph.D.
(one graduate; two undergraduates)

Robert Brown, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Purification of venom antihemorrhagic factors from the serum of warm-blooded animals.

Regulatory mechanism of lysogenization by phage 22 and diphtheria toxin with antitumor activity.

Biomedical implications of antlerogenesis in deer.

Major Equipment:

Beckman biogamma counter.

Ultracentrifuge.

LS-230 liquid scintillation counter.

Model 25 spectrophotometer.

Electron microscope.

Texas Southern University

Program Director

John J. Session, Ph.D.
Professor and Head
Department of Biology
Texas Southern University
3201 Wheeler Avenue
Houston, Texas 77004
(713) 527-7005

Project Investigators Number of Student Participants

John J. Session, Ph.D.
(two undergraduates)

Marion Hillar, M.D., Ph.D.
(one graduate; two undergraduates)

Warren Williams, Ph.D.
(one graduate; one undergraduate)

Sunday O. Fadulu, Ph.D.
(one graduate; two undergraduates)

Jarvis T. Chan, Ph.D.
(two graduates; two undergraduates)

James Guildford, Ph.D.
Edward J. Eugere, Ph.D.
Clayborne M. Monk, Ph.D.
Kirit A. Shah, Ph.D.
(three undergraduates)

Research Projects/ Major Equipment

Projects:

Karyological and immunological studies on mouse leukemias.

Gene expression and its control in normal and tumor cells.

Cytosineless mutagens in bacteriophage T4.

Role of fungal toxins in the pathogenesis of fungal diseases.

Reversal of carcinogen-induced cytotoxicity.

Evaluation and biopharmaceutical studies of major mitotane metabolites.

University of Texas at El Paso

Program Director

Donald E. Moss, Ph.D.
Associate Professor
Department of Psychology
University of Texas at El Paso
El Paso, Texas 79968
(915) 747-5551

Project Investigators Number of Student Participants

Terry W. Allen, Ph.D.
(one graduate; two undergraduates)

James E. Becvar, Ph.D.
(one graduate; two undergraduates)

John R. Bristol, Ph.D.
Lillian F. Mayberry, Ph.D.
(two graduates; three undergraduates)

Donald E. Moss, Ph.D.
James V. Devine, Ph.D.
(one graduate; two undergraduates)

Eppie D. Rael, Ph.D.
(two graduates; two undergraduates)

Richard J. Salo, Ph.D.
(one graduate; two undergraduates)

Keith H. Pannell, Ph.D.
(two graduates; two undergraduates)

Research Projects/ Major Equipment

Projects:

Intersensory functioning during infancy.

Bacterial bioluminescence.

Pathophysiology of *Eimeria mieschulzi* and *Nippostrongylus brasiliensis*.

Cholinergic facilitation of memory in aged primates.

Brucella cell fractions and the immune response.

Interferon production in macrophages.

Studies in bioinorganic chemistry.

Major Equipment:

Beckman LS-230 liquid scintillation counter.

Zeiss EM-10 electron microscope.

DuPont OTD-2 ultracentrifuge.

Walk-in environmental chambers.

Aged-primate colony.

University of Texas at San Antonio

Program Director

Paul H. Rodriguez, Ph.D.
Associate Professor of Genetics
Division of Allied Health and Life Sciences
University of Texas at San Antonio
San Antonio, Texas 78285
(512) 691-4459/4172

Participating Institution:

University of Texas Health Science Center at San Antonio (UTHSCSA)
7703 Floyd Curl Drive
San Antonio, Texas 78284
(512) 691-6011

Project Investigators Number of Student Participants

Philip L. Stotter, Ph.D.
(one graduate; one undergraduate)

Paul H. Rodriguez, Ph.D.
B. S. Thyagarojan, Ph.D.
(three undergraduates)

Robert D. Renthal, Ph.D.
(one graduate; one undergraduate)

Herbert B. Silber, Ph.D.
(one graduate; two undergraduates)

Robert F. Williams, Ph.D.
(one graduate; one undergraduate)

William S. Champney, Ph.D.
(one graduate; one undergraduate)

N. Neal Guentzel, Ph.D.
(one graduate; one undergraduate)

Wendell D. Winters, Ph.D. (UTHSCA)
(one undergraduate)

Research Projects/ Major Equipment

Projects:

New stereocontrolled synthesis of quinine.

Synthesis of chemical mutagens and sensitivity in mosquito populations.

Structure and mechanism of the purple membrane proton pump.

Model systems of ion binding.

Application of colchicine derivatives to the study of tubulin.

Studies on protein synthesis by mutants of *E. coli*.

Study of gastrointestinal and systemic candidiasis.

Immunotherapy of human bladder cancer.

Major Equipment:

Virology and cell culture laboratories.

Atomic absorption and gas chromatograph-mass spectrometers.

IBM 370/148 computer and PDP 11/45 with several remote terminals.

Data General Eclipse S/200 and an Applied Dynamics AD-5 analog computer.

NMR, infrared, and UV-visible spectrophotometers.

High-pressure liquid chromatographs.

Norfolk State University

Program Director

Maxwell A. Bempong, Ph.D.
Professor of Biology
Norfolk State University
2401 Corprew Avenue
Norfolk, Virginia 23504
(804) 623-8959

Project Investigators Number of Student Participants

Maxwell A. Bempong, Ph.D.
Wilma Barnes, Ph.D.
(four undergraduates)

William E. Moore, Ph.D.
(four undergraduates)

Research Projects/ Major Equipment

Projects:

Biological effects of mutagens and anticancer drugs.

Structural basis for induced aggregation of plasma albumins.

Major Equipment:

Fluorescence microscope.

Coulter counters.

Animal facilities.

Virginia State University

Program Director

Dilip K. Sen, D.V.M., Ph.D.
Professor of Life Sciences
Box G
Petersburg, Virginia 23803
(804) 520-6131/6247

Project Investigators Number of Student Participants

Evelyn W. Jemison, M.S.
(two graduates; two undergraduates)

Dilip K. Sen, D.V.M., Ph.D.
(one graduate; two undergraduates)

Janeshwar Upadhyay, Ph.D.
(two graduates)

Marvin L. Powell, Ph.D.
(one graduate; two undergraduates)

Robert P. Ferguson, Ph.D.
(one graduate; one undergraduate)

Parthena M. Martin, Ph.D.
(one graduate; two undergraduates)

Research Projects/ Major Equipment

Projects:

Mitogenicity and mutagenicity of cyclamates and cytotoxins.

Trypanosomiasis: biotoxin and interaction of hormones.

NADPH-oxidase synthesis in some strains of clostridia and its role in sporulation and spore resistance.

Relationship between mitosis and flagellar reconstruction in *Chlamydomonas reinhardtii*.

Temporal discrimination in interval schedules.

Interaction of phencyclidine with other drugs of abuse.

Major Equipment:

Beckman recording spectrophotometers.

Beckman liquid scintillation counter.

Electron microscope and supporting equipment.

Apple II plus microcomputer.

Coulbourn polygraph/recording electroencephalograph.

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Public Health Service
National Institutes of Health, Bldg. 31 Rm. 5B10
Bethesda, Maryland 20205

OFFICIAL BUSINESS
Penalty for Private Use, $300

Bulk Rate Mail
Postage and Fees Paid
Dept. of Health and Human Services
Permit No. G-29

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